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VOL. 1, MANILA, P. I., DECEMBER, 1904 No. 7

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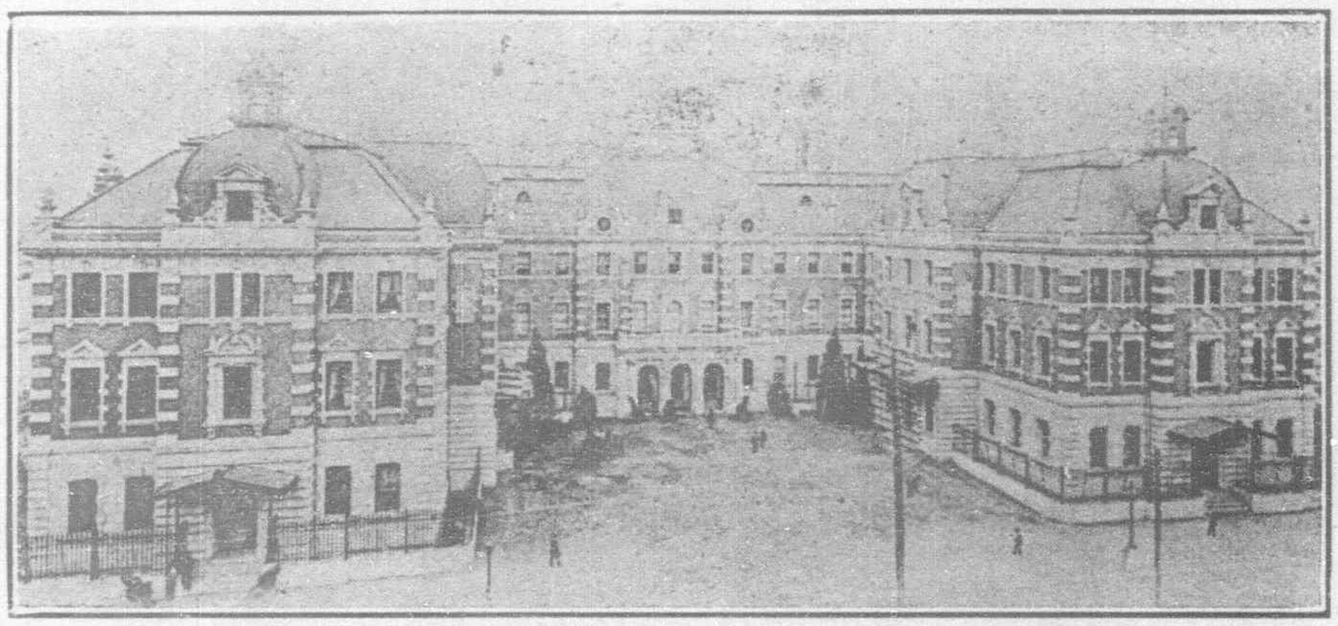

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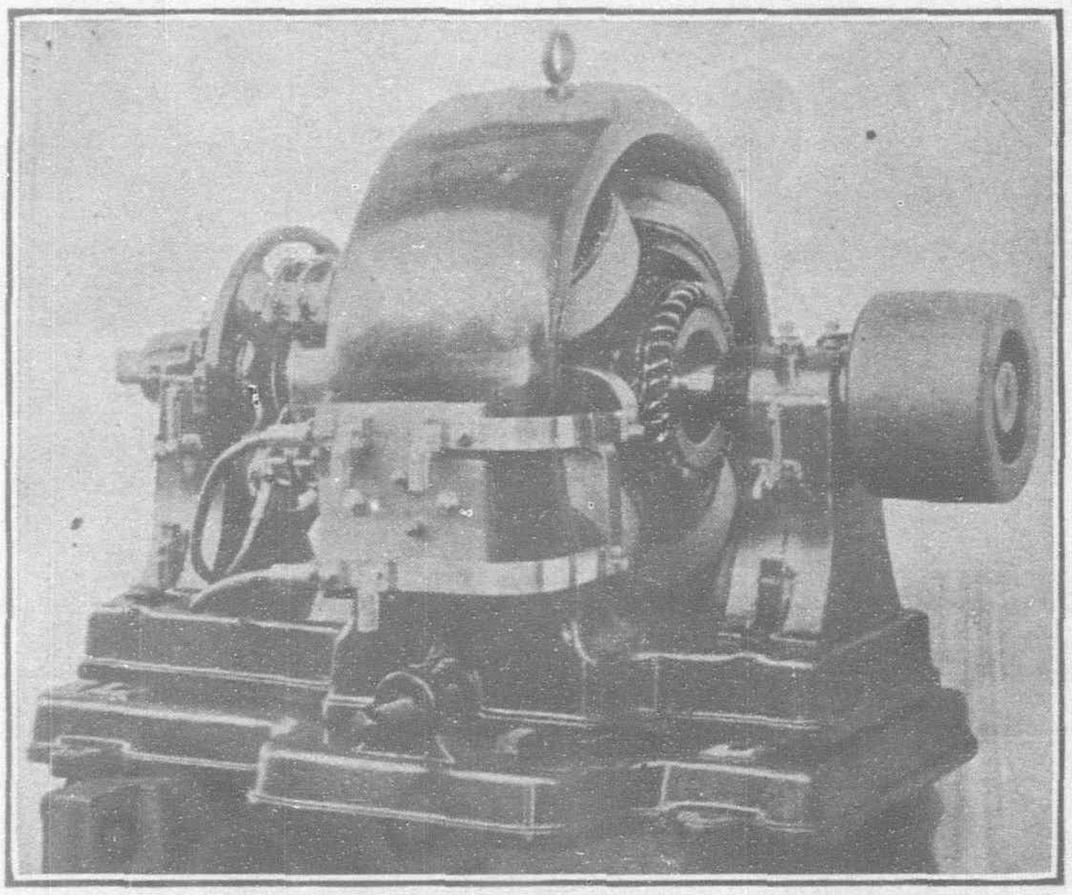

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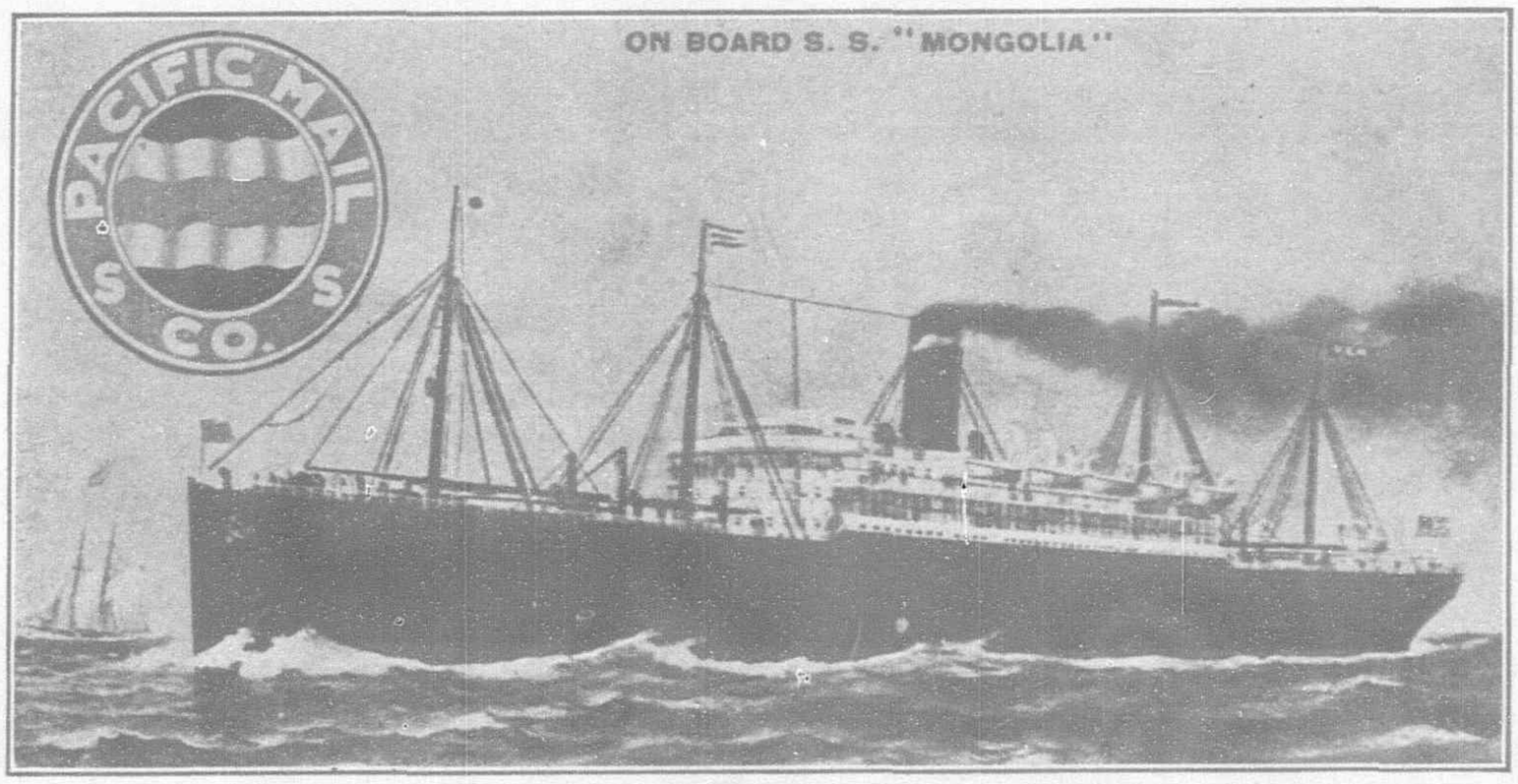

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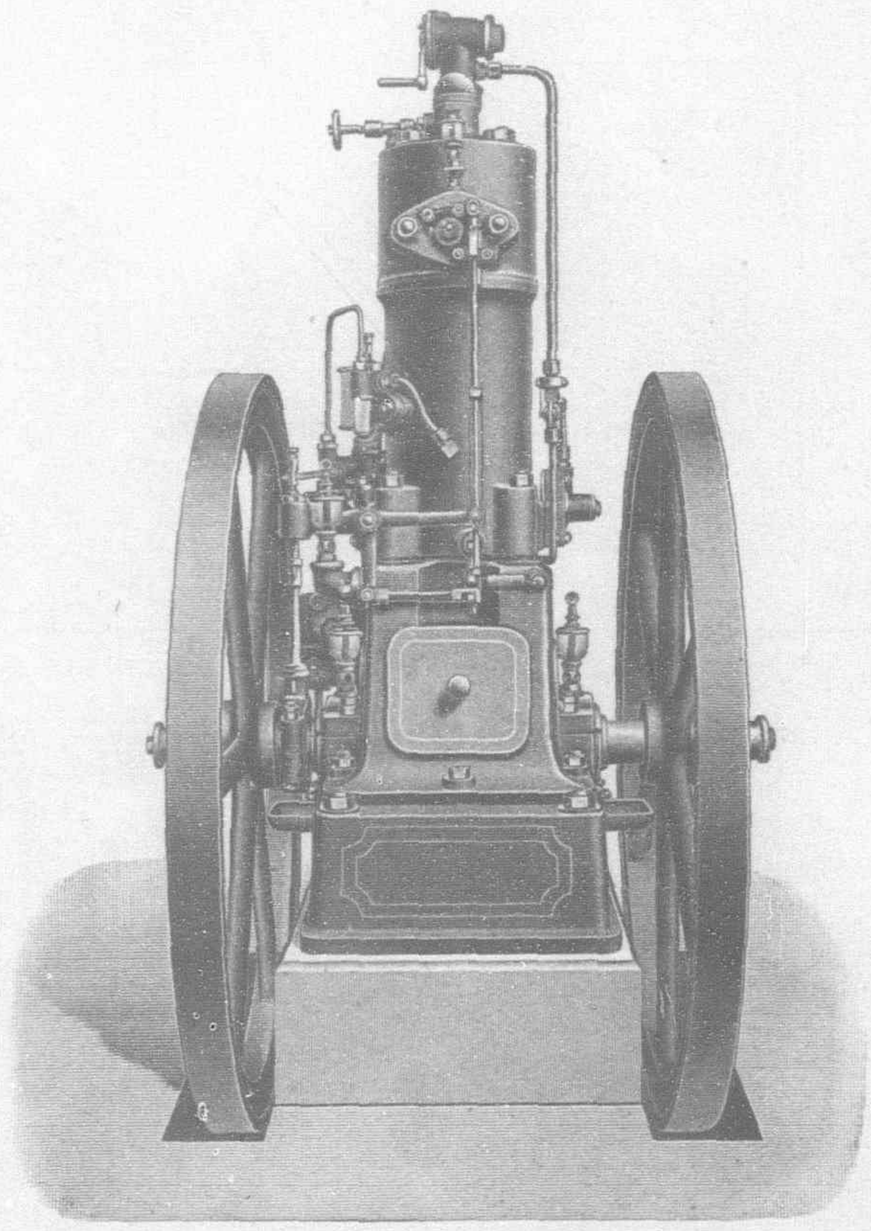

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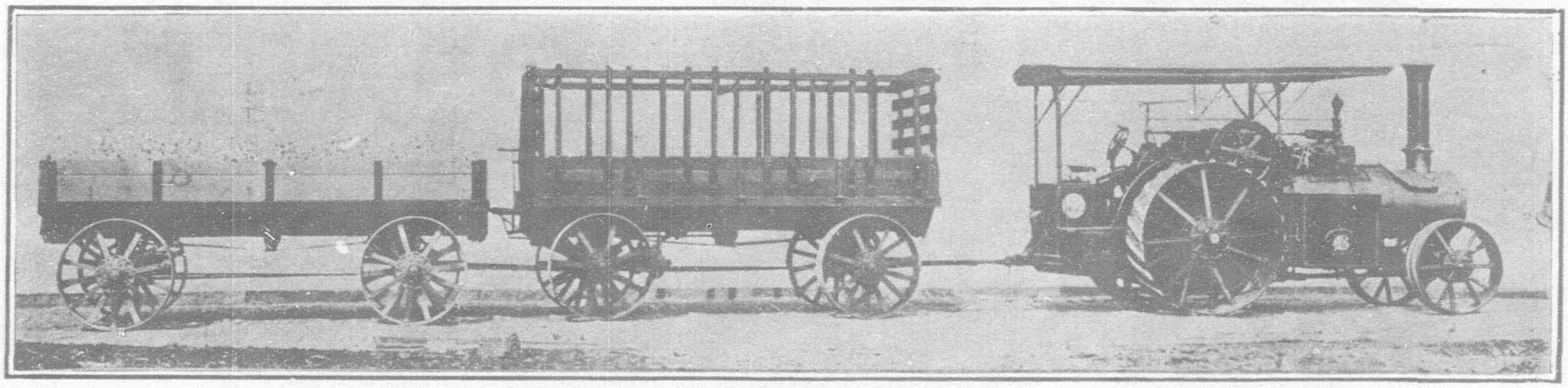

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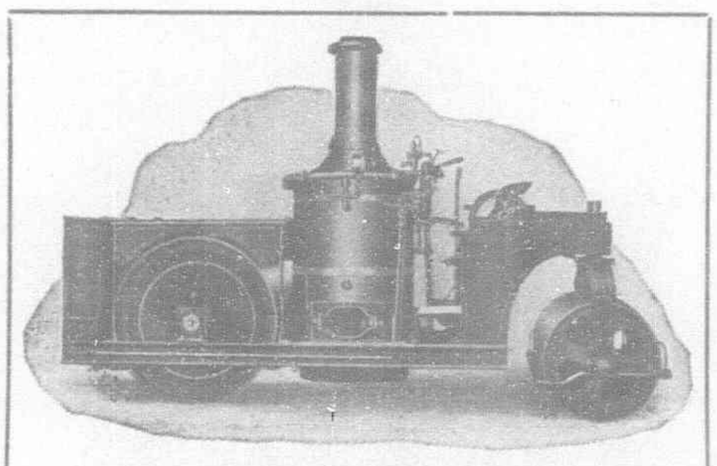

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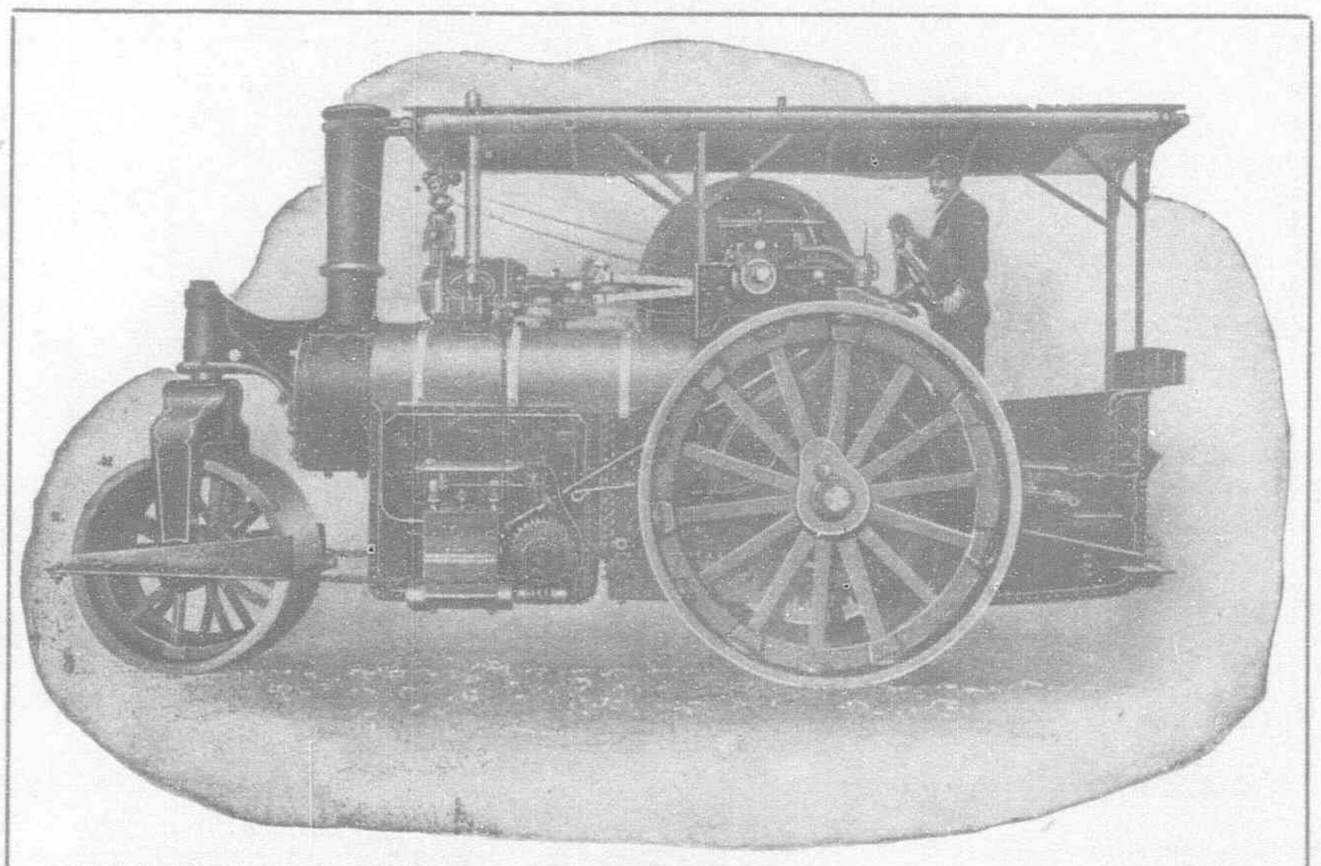

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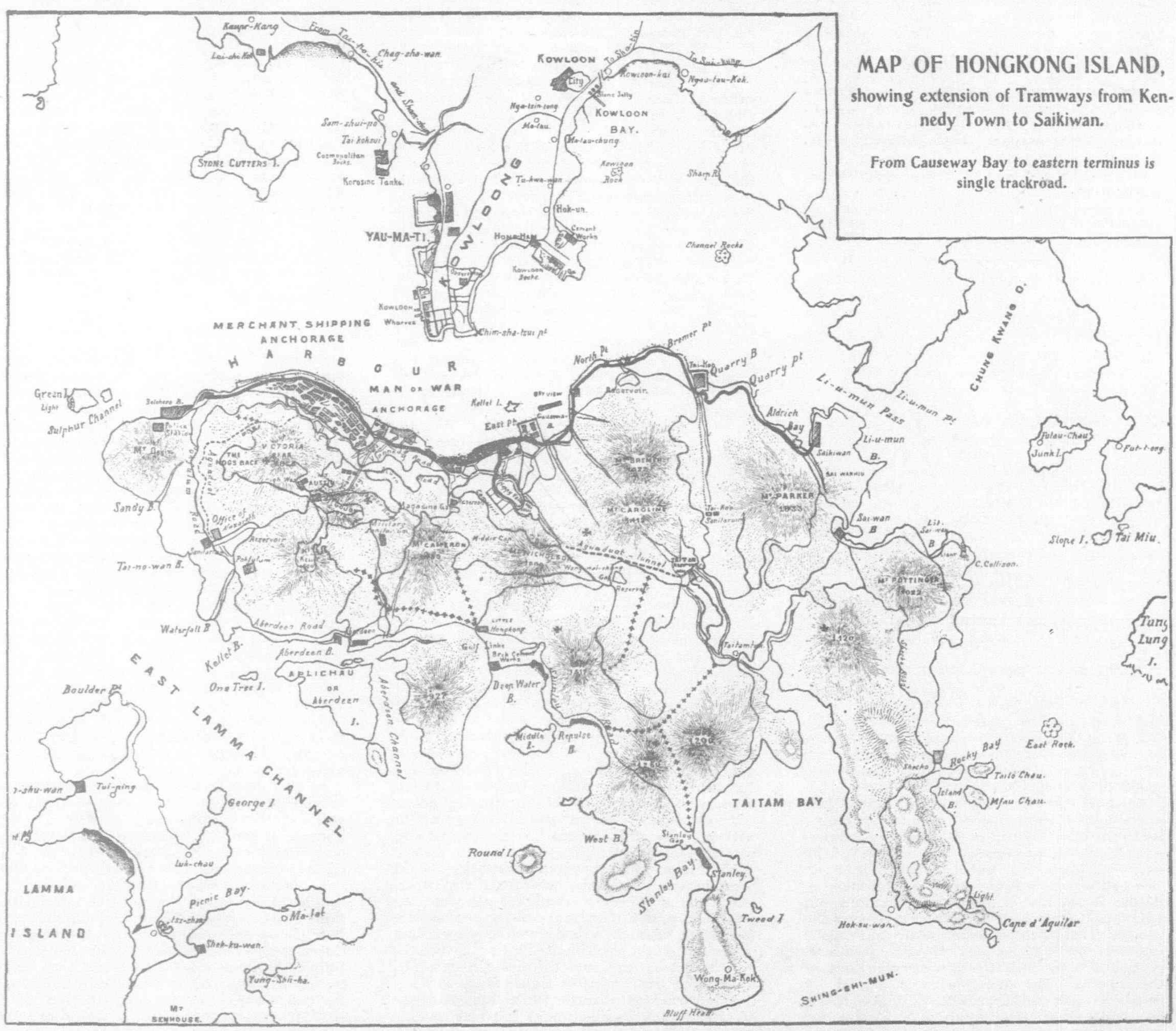

MAP OF HONGKONG ISLAND,

showing extension of Tramways from Kennedy Town to Saikiwan.

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THE HONGKONG ELECTRIC TRAMWAYS

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(Continued on page 12.)

FAR EASTERN REVIEW

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THE FOREIGNER'S RIGHT TO PETITION

A most interesting precedent has been established by Sir John Anderson, the Governor of the Straits Settlements, regarding the right of foreign business firms to petition the government direct.

The question involved arose out of the opposition of the Singapore business community to the great harbor works scheme, proposed by the Government, which was fully described in the September issue of this paper. The matter was discussed at a general meeting of the Singapore Chamber of Commerce, and a lengthy memorial prepared, reviewing the project from the standpoint of the mercantile interests of the port, and raising several pertinent objections to the carrying out of the scheme. The memorial was signed by nearly all the leading merchants of Singapore, as members of the Chamber of Commerce, and as that body is cosmopolitan in character, as is natural under the conditions in a free port, the signatures of a large number of foreign firms and individuals were affixed to the document, which was then forwarded through the regular channels for the consideration of the Governor.

Instead of receiving the memorial merely as an expression of opinion of the commercial interests of the port, the governor viewed the action of the foreign merchants as a serious menace to the interests of the empire, taking the stand that alien firms had no right to sign petitions to the government on such issues as the harbor scheme, adding that it was quite irregular and foreign to his experience. If the precedent was allowed to establish itself, it might lead in the future, with the great development of the Far East and the constant influx of foreigners, to demand as a right the privilege of representation on the legislative council, and a voice in the management of the government.

The governor refused to admit that foreigners had the same constitutional right to appeal direct to the administration as that enjoyed by British subjects, and if they considered their interests menaced the only course for them to pursue was to present their complaint to their consuls, who could take the matter up on their behalf. His stand seems to have been well taken, by the fact that, if this privilege was conceded, it would give the foreigners the double advantage of the right of appeal on the same footing as British subjects, and the right to bring pressure to bear on their own government.

The "China Mail," in discussing the incident, supports the action of Sir John Anderson, and states in substance that Britain gives to all foreigners at home or in the colonies, the same rights as those of her own subjects, only exacting in return the due respect for the flag which protects them, and under which they accumulate their fortunes. They are at liberty at any time to appeal to public opinion, if they feel they have been treated unjustly, with the assurance that they will be accorded that fair play traditional with the Britisher. Many foreigners, however, assume that they have as much right to a voice in the government and in the disposal of public affairs as have British subjects.

The incident is of especial interest to the Americans in the Philippines at the present time, and supplies food for serious reflection. The best efforts of the American business community of Manila have recently been directed towards a unification of the different national Chambers of Commerce into one harmonious body which would meet and discuss any measure for the general welfare, and petition or memorialize the government on any scheme or law which might affect the interests of the community. From the American viewpoint, this united action would be a great assistance to the betterment of trade conditions, and also enable them to present to the government in a concrete form the united opinion of the business community on any matter of importance calling for such action. In this manner much of the friction between the two would be done away with, and a better feeling engendered between all elements, instead of each clique pulling against each other, and embarrassing the government in their endeavor to legislate for the good of all.

A petition of this nature, emanating from a general Chamber of Commerce, would undoubtedly receive due consideration from our Insular authorities, and we believe that such a state of concord is highly to be desired, to assist in framing equitable laws which will not discriminate too heavily against any particular interests.

If, however, the American authorities should take the same stand as the governor of the Straits, one of the most important advantages of a General Chamber of Commerce would be lost, and the formation of such a body unnecessary. This precedent established in the Philippines would give the American and Filipino Chambers of Commerce the exclusive right of approaching the government direct, while the petitions of the foreign bodies would have to be submitted through their respective consuls, and passed through tedious diplomatic channels.

Sir John Anderson has undoubtedly looked a long way into the future, in taking his stand on this point, and there are peculiar reasons connected with the commercial situation at Singapore, which have undoubtedly actuated him in snubbing the foreign members of the Chamber of Commerce.

It must be conceded, however, that his decision is well taken, and from the British point of view is easily defended. Britain has been the one nation in the world who has played the game fair. There has been no hypocritical cant in the expansion of her empire and colonies. Here in the Far East, she has set the example of the open door, and maintained it to the certain undoing of her own interests in her own colonies. Hongkong and the Straits ports are free, and under the safe protection of the British flag and a powerful fleet merchants of all nations have established themselves and are gradually undermining her influence and capturing the trade which by all laws of equity belongs to her subjects. France in Indo-China, Holland in Java, Germany in Shantung, Russia in Manchuria, and the United States in the Philippines have built up tariff walls around their respective possessions to keep out foreign competition. Britain alone has welcomed all comers, and thrown her ports open to the world, and she is reaping her reward by seeing foreign firms gradually forging ahead and underbidding her own manufacturers in her own ports and spheres of influence. Foreign steamers have made big inroads into her carrying trade in the Far East, thanks to her policy of free ports and free trade.

Especially has this been the case in the Straits Settlements. Numerous have been the complaints of the British mercantile community of that colony. But the Home Government is committed to their policy and no protection is forthcoming. The wound rankles, and we see in the action of Sir John Anderson the first step towards crushing what might in the future lead to a recognition of foreign mercantile rights which might seriously affect British supremacy in her own possessions.

TWENTIETH CENTURY ASIA

THE XXth Century Asia is going through the greatest crisis in its history since the eras when Mongolian and Mohammedan conquests successively overturned the ancient dynasties of Asia. The results of the history then made appear plainly now as influences working with the present European control to make the Asia of the present what it is in its very great differences from Europe and America. Japan, China, India, Ceylon, Siam, the Philippines, and Persia, as countries which represent XXth Century Asia, stand for all there is of the present-day Asia in race, except the lowest aboriginal tribes of Siberia. They stand also for almost the whole map, for if the countries classed on last year's maps as dependencies of China are included with it, only Siberia, Asiatic Turkey, and Afghanistan fail to present the "Asiatic problems" of the present to the world. Incidentally Asiatic Turkey is represented in so many ways before the world in the matter of its "native art" that no one who looks for it will miss the working of the Arab mind, modified by Turkish control. Afghanistan is practically Persia on a lower scale.

In the near future the Asia which we are now beginning to know so well these days will be "European Asia." Already Tibet has become a British "sphere of influence," and on each side to the North and to the South of the Himalayas, the era of railroad building has begun. The profound sensation of the breaking up of the ancient Asiatic tradition which made itself felt when the building of the railroad from the Mediterranean Coast connected Jerusalem with the modern peoples in idea as it had never been before, is not now excited by Russian railroad building in Siberia, by the construction of the steel transportation lines in China or by the extensive lines built in India under the English Administration. The era of Asia as a continent of railroads has already made such a beginning in 1904 that, as distinguished from its own past, it may fairly be called "Modern Asia" at the beginning of a period of the most profound and revolutionary changes of all history. Railroads and telegraphs, the Caucasian idea in them and in all that goes with them, will certainly dominate the entire continent commercially before the close of the present generation, as they do now politically. The question, then, is whether the Asiatic mind will change under these influences, and, if so, how far will it change? Asia answers the question in the most di-

rectly contradictory manner. India appears as a representative of European influences, supposedly the most advanced. It has more in it that is distinctly European and distinctly modern than all the rest of Continental Asia combined. Yet the mind in its native work is still the mind of Asia, with so small a change that there is no difference as marked between the ideas of Indian work now and that of a hundred years ago. Since it has been in India, England itself has changed far more in everything, as its controlling ideas are shown in the arts and industries, than India has changed in anything.

The influence, which modifies and changes the ideas of the original Hindoo mind, is today strongly suggested, not as English or European, but as Persian. When the Hindoo worker in clay or the metals or in textiles rises above his native ideas he begins to show unmistakably the control of ideas which come from the Saracens, through Persia, and appeal to him far more strongly than anything Europe has to offer him through English models. Hindoo work is thus as completely Asiatic now as it was before the time of Warren Hastings. It is easy to trace these influences in any collection of objects representing race work or national ideas. They stick where they have once taken hold in the most astonishing ways, and appear in the most unexpected places. The Saracen methods of the Crusades are still the tradition through which Persia is developing. They fixed themselves on Spain in many ways during the Moorish occupation, and when the Moors were driven out during the period when America was discovered, the great era of colonization which followed, carried them to the Philippines, to California and Mexico, and to South America, so that from the Philippines, from Arizona, New Mexico, and California, in architecture and in many art forms, we have the same ideas, modifying Caucasian and Malay methods, which modify those of the Hindoo through Persia. This Persian influence makes the difference most apparent between the work of India and Siam on the one hand, as on the other there is a difference made apparent by the influence of China on Siam. The three great Asiatic ideas, still struggling for control, as they are likely to do, in spite of all modernizing influences, are the Hindoo, the Chinese, and the Persian. The Persian is by far the most advanced of the three at the present time, as it was in advance of the European idea of the time of the Crusades, when European methods began to be revolutionized by the Saracen influence. Mohammedan India, on which England has made no impression, stands for the Persian idea, and when Hindoo methods of work are being modified it is evident that the Mohammedan Asia of the present and past is far more responsible for the change than Christian Europe.

The change in Japan, which in three decades has moved or attempted to move forward more than three centuries, is in complete contradiction to this condition in India. Prior to its reorganization, the controlling idea of Japan was that of Europe at about the time of the invention of printing. It was organized in feudal clans, and its government system, as it affected the people, was closely parallel to that of England during the period of the Wars of the Roses. Today its mind and methods are hardly surpassed in extent and variety by that of any European country. It is a country fully under the influence of the most advanced Caucasian ideas. It stands thus for "Modern Asia" in its own view and in the general view as the most progressive country of Asia, and one of the most progressive of the world. This is borne out fully by the *prima facie* evidence of its progress which has been given to the world by the Russo-Japanese War. It would be difficult to think of a single European idea or important method which does not appear utilized in some way by Japan.

Is the work and is the mind in Japan still Asiatic after all this? If the question can be fairly answered on the evidence it will go far towards suggesting in advance what Modern Asia will be in its age of railroads and telegraphs. As far as answer can be given on evidence so varied in detail, it lies in another question—that of how much can be found in the work of present-day Japan, which is not unmistakably Asiatic, as fully Asiatic as the work of India and Persia. Leaving out weapons and costume, making the judgment on design, on the ideas of order, which show in every work of use and ornament, the question answers itself as soon as the work of present-day Japan has been fully examined. It is all Asiatic, and it is most Asiatic in that which has caused it to be mostly admired and commercially sought after. It is changing and changing rapidly, but the change is at all points an evolution from the ancient ideas and ancient methods which China so copiously illustrates in the work of the Chinese. Japan has advanced from this as the Hindoos had advanced on their own ideas by borrowing closely related, but much superior, Persian methods. The Hindoo could not see what was badly shaped and out of order in his own best work until he had a Persian model. Then he borrowed so much of the Persian mind as he felt he needed to reinforce his own. This is what appears in Japanese work as borrowed from Europe, just so much as the Japanese mind needs to reinforce its own processes. It rearranges its own Japanese details in European order, making them not less, but even more, Japanese. The political revolution in Japan is complete to all appearances. Seemingly, Japan was violently torn loose from its own past and made over into a European country. But it would be difficult to find anything to show this in Japanese work as it represents the mind and the methods of the people. They see in European and American work a power of making orderly combinations they had not reached. They grasp at this and do actually grasp it. The combinations they make by using it, however, are of their own ancient ideas evolved into new appearances, which are rather a result of new combination than of anything actually novel in the thing itself. At last, Japan itself, when taken as the test, gives the same answer to the question of the course of Modern Asia which is given by India. It is going through hasty processes of change in all the outside forms of its life, yet there is nothing to show that these processes interrupt its evolution of its own Asiatic ideas. Everything tends to show, on the other hand, that this evolution has been greatly hastened, but not interrupted at all. Japanese work in 1904 is certainly not less Japanese than its work in 1804. The change has been very great, and the work has grown more orderly as a result of it, without growing less characteristically Japanese.

Siam has been making, with strong intentions of success, an effort to learn what Japan has already learned. Its work, however, stands chiefly as an illustration of the tenacity of the Asiatic mind in its processes. Siamese work is seldom less than two-thirds Chinese in its motives and methods, and, when modified, it is from India rather than from Europe or America.

The theory of the modernization of the Asiatics could be plainly illustrated in circles, one within the other. The idea is to give these peoples all they will get in each successive circle to the highest. This seems to be actually what takes place in the development of different peoples, and it is illustrated in the habit of the Chinese mind, working out in its own circle and in its own way everything Europe and America are attempting in the greater circles drawn around China and now inviting it out of its past into a Caucasian future. Its work of the present is closely parallel in both merits and defects to the work of Northern Europe in the XIVth and XVth centuries. In point of mind and method, China belongs now in all that is actually Chinese to those centuries, rather than to the XXth, into which it is about to be forced by modernization of its methods of business. It will certainly go through most extraordinary changes, and that soon. The question of how far this will result in an actual change of its mind as an Asiatic mind, has its answer suggested not only in the case of India and of Modern Japan, but also in that of Persia, whose most modern industrial and commercial work is made most characteristically Persian when it is most fully under European control. As their Asiatic character made Persian goods sought after in Europe and America in preference to things less extraordinary, the most modern Persian goods manufactured in Persia by French and other European companies are severely Persian in everything which appeals to the eye when it is seeking for differences on which to form its judgments. This is likely to be the most far-reaching of all infiuences in Modern Asia.

Whether or not it passes completely under Western control politically, the Asia of 1904 shows a mind that can change rapidly and easily in all which belongs to its political life, without at all ceasing to develop out of itself its own inherent ideas. It is probable that any American manufactured product might be duplicated easily by giving a contract for its duplication to any amount to Japan. It is scarcely less probable that the same success in imitation would be shown in China were the experiment tried. Even India might succeed past expectation, but no Asiatic country shows in its own work in 1904 anything on which to base a prophecy that Modern Asia, the Asia of the XXth Century, will ever be Westernized in anything beyond submission to political and trade control, and the physical development of the resources of the country.

"TIMES OF MALAYA."

We have received copies of the "Times of Malaya," a daily paper published at Ipoh, the center of the tin mining districts of the Malay peninsula. It is especially interesting, as, in addition to its regular news service, its columns contain many articles of merit on the mining and planting industries of that corner of the Far East.

A regular weekly mail edition has recently been issued by its energetic editor, Mr. Silas C. Penny, which speaks well for the progress of the new paper. The subscription is $3.50, Straits Currency, per quarter. Under the title of the "Times of Malaya," the venture has recently been registered as a limited company, but as yet we have not seen the stock quoted in the share lists. We wish it every success.

LUZON SUGAR REFINERY

The sudden upward movement in the shares of the Luzon Sugar Refinersy, advancing 12 points in two weeks, must be taken as a favorable indication of something more to follow.

The plant of the company located at Malabon, a suburb of Manila, has remained idle since 1898, or since the American occupation of the Islands.

The capital stock of the company, amounting to $700,000 mex. divided into 7000 fully paid up shares of $100, each, has paid no returns since 1897, when a 3 per cent dividend was declared. The stock has steadily declined until it has stood at $6.00 for the last year, or an amount far below the actual value of the plant and property. The upward movement, which reached $20.00 per share in Hongkong on the 8th inst, would indicate that some interests are endeavoring to gain control, or the plant is to be placed in operation.

COINING MACHINES FOR SOOCHOW.—Governor Tuan Fang of Soochow had appointed a deputy in Shanghai for the purpose of purchasing the necessary machinery for a copper cash mint. It is understood that the deputy has concluded a contract to this effect with a British merchant, and the purchase money is to be paid on delivery of the machines at Shanghai

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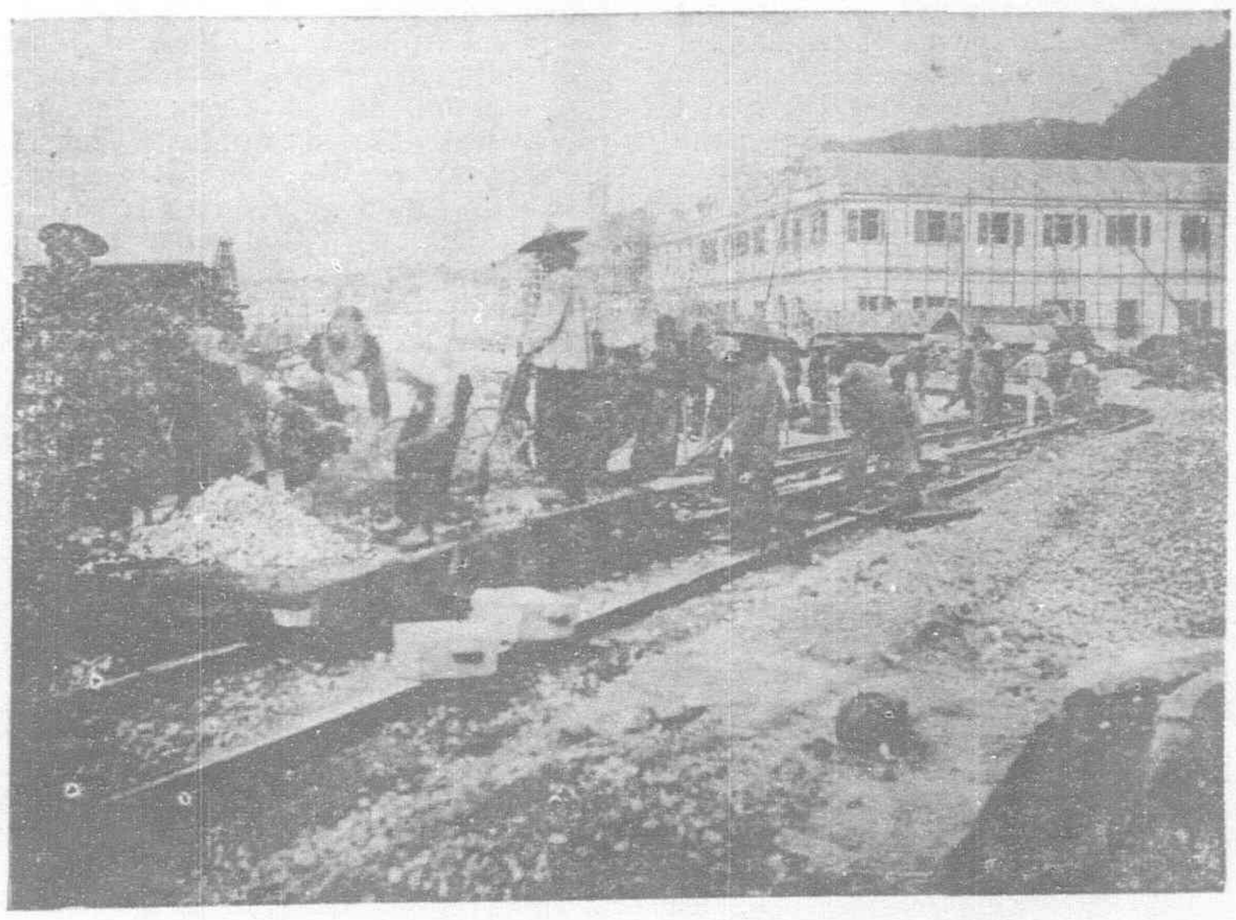
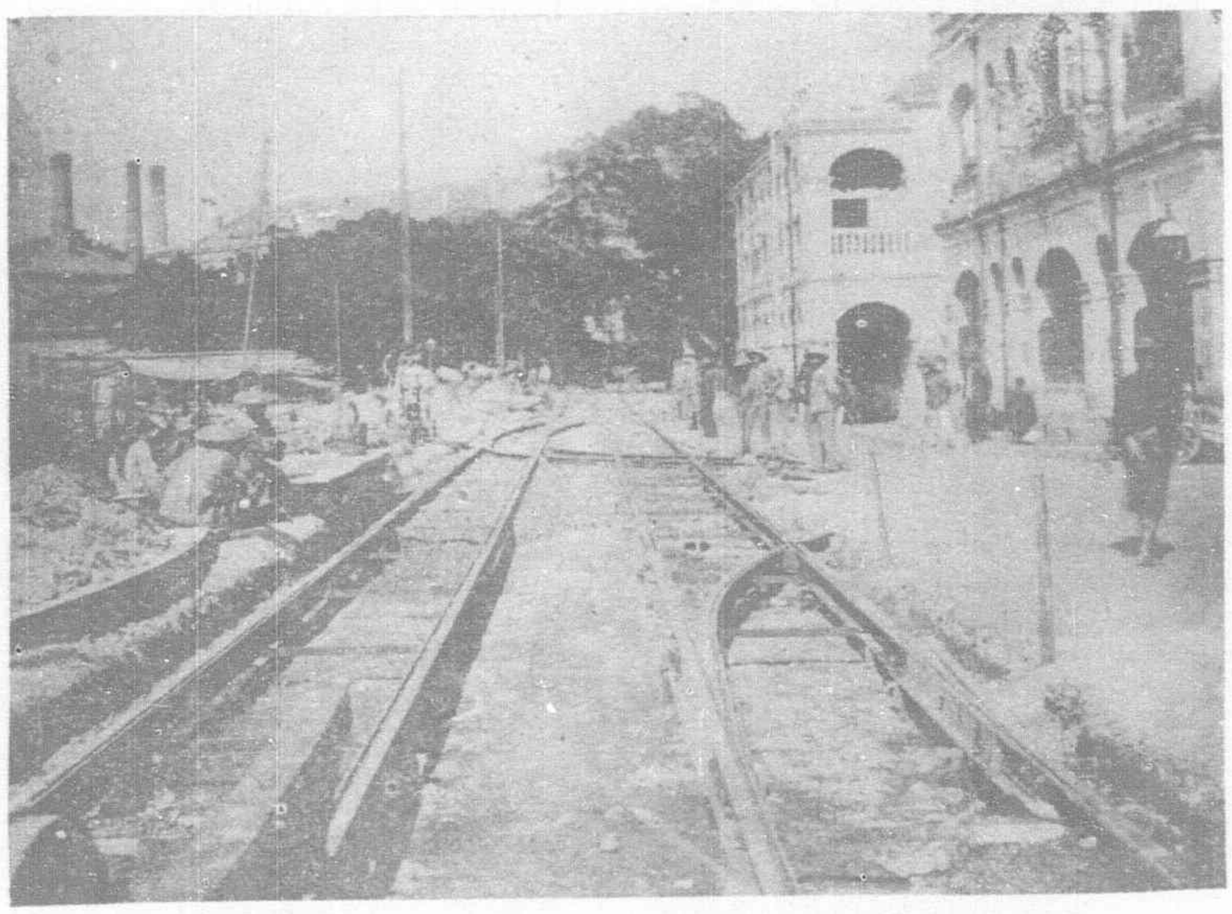
HANGCHOW-HANKOW RAILWAY.—A probationary Taotai of Kiangsu has filed a petition to the Wai Wu Pu, requesting the right to build a railway between Hangchow and Hankow. After sanction having been given, the Taotai proposed to collect Tls. 8,000,000 as foreign capital and Tls. 12,000,000 as Chinese capital.



HONGKONG TRAMWAYS: CHINESE CONCRETE GANG AT WORK.



HONGKONG TRAMWAYS: METHODS OF LAYING TRACK.

HONGKONG ELECTRIC TRAMWAYS

(Continued from page 9.)

In 1902 an ordinance was passed by the Legislative Council of Hongkong authorizing the tramways to be laid down by the Hongkong Tramways Electric Company, an English Company with its headquarters in London, and work was commenced in May, 1903. The detailed plans, etc., were prepared by the Company's Consulting Engineers, Messrs. Alfred Dickinson and Co., of Birmingham, who appointed Mr. Harold Hackwood to act as their representative in Hongkong as Resident Engineer in charge of the construction. The contractors were Messrs. Dick, Kerr and Co. of London, who carried out the whole of the work.

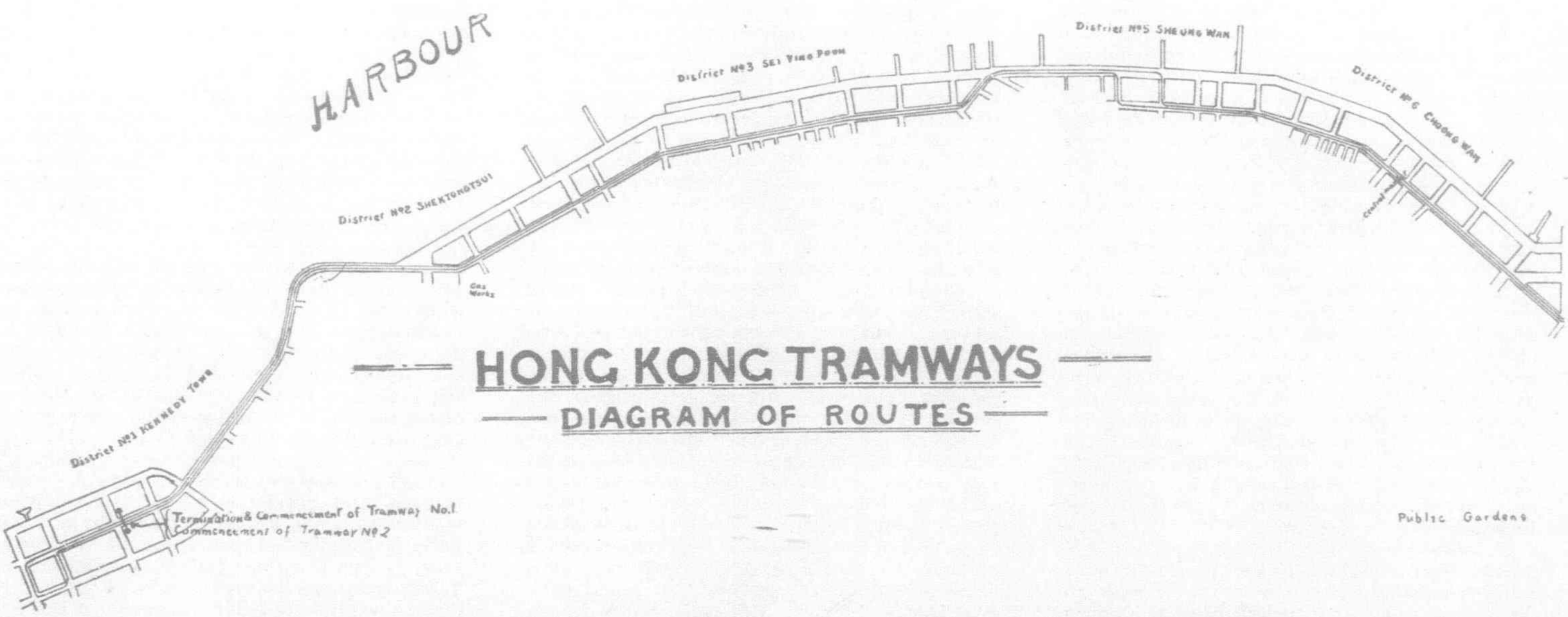
The total length of single track is 14 miles, which is laid in 9¼ miles of route. The track is laid to a gauge of 3 feet 6 inches, with rails of the girder type weighing 86lbs. per lineal yard. Each rail joint is double bonded with 6/0 S. W. G. copper bonds.

The lines within the City are laid for the most part as centre pole construction, but the eastern portion of the route, being outside the City boundary, is laid as single line with passing places and is equipped on the side pole system.

With the exception of a short branch line, which runs to the Race Course, the route runs parallel with the water front, and with the exception of a short length at Quarry Bay is practically level. At Quarry Bay a short length of road grading has been done, the original grade of 1 in 10 having been reduced to 1 in 15. Beyond Quarry Bay is the eastern terminus of the line, where is situated the small Chinese village of Shaukiwan.

Owing to the varying nature of the ground three forms of permanent way construction have been adopted. Where the ground was solid the rails were bedded on a concrete beam 18 inches wide and 6 inches deep; where the ground was not so good a bed of concrete 6 inches deep and 7 feet 3 inches in width extending under the whole track and 1 foot 6 inches on either side was adopted; over doubtful ground which had been recently reclaimed from the sea, this concrete bed was increased to 8 inches in depth. The concrete used was mixed in the proportion of 6 to 1, Portland cement of local manufacture and exceptional good quality being used. After the rails and the bottom concrete were laid the road surface was made up to rail level with concrete and finished off with a smooth surface to the proper cambre of the road.

The overhead construction has been carried



PLAN OF LOWER STREET SYSTEM OF HONGKONG, SHOWING TRAMWAY ROUTES. (WESTERN SECTION.)

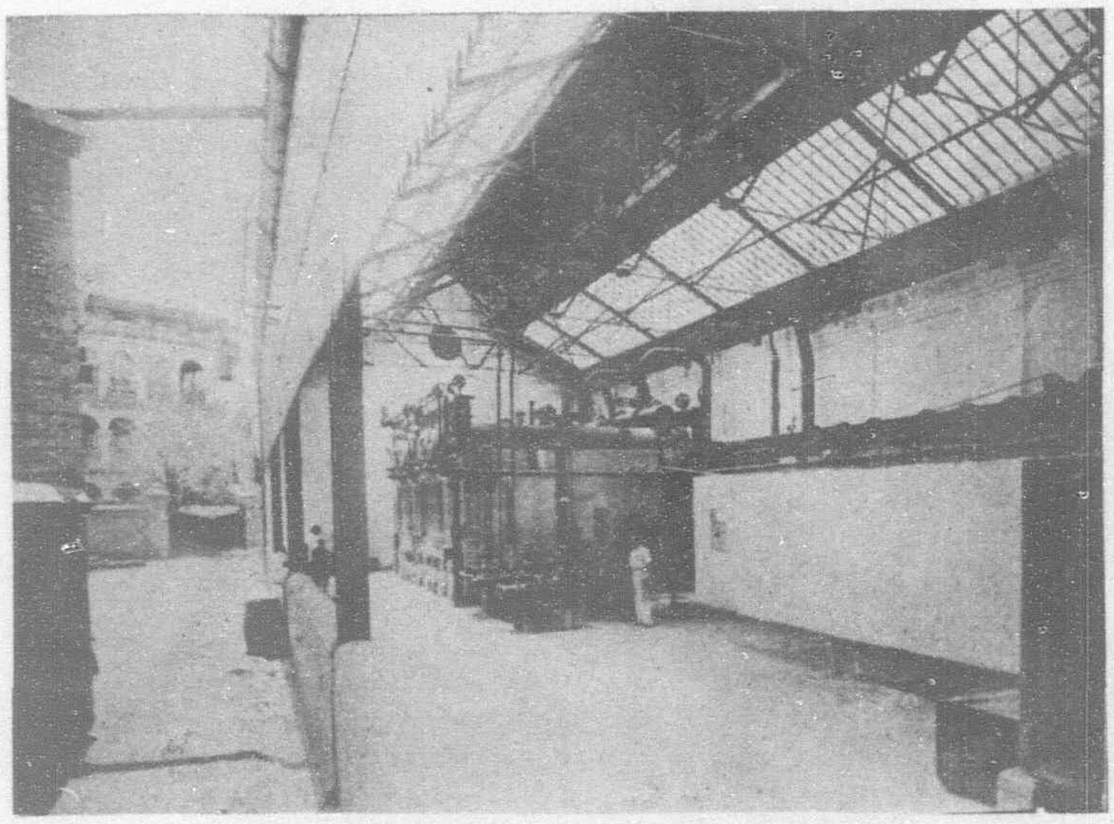
out in a very neat manner, the length of arms on the centre poles not exceeding 2 feet, while the arms on the side poles vary in length, the majority of them being six feet long. The poles are of mild steel, 28 feet 3 inches in length, 7 inches in diameter at the base, tapering to 4 inches in diameter at the top. They are set six feet in the ground in a solid block of concrete. Within the city, ornamental base castings greatly add to the appearance of the poles, which are still further enhanced by the addition of wrought iron scrolls on the bracket arms.

The trolley wire is divided into half mile sections by means of section insulators, and at each of these points the main feeder cables are tapped and current is taken to supply each section of trolley wire; this is accomplished by running the feeders through a feeder pillar containing the necessary switches and fuses; the connections from the feeder pillars to the trolley wires being made with rubber covered 37-16 cables carried up inside the poles and along the sides of the bracket arms. The pressure on the trolley wire is 500 volts. A lightning arrester is provided in each feeder pillar and also a telephone giving direct communication with the power house.

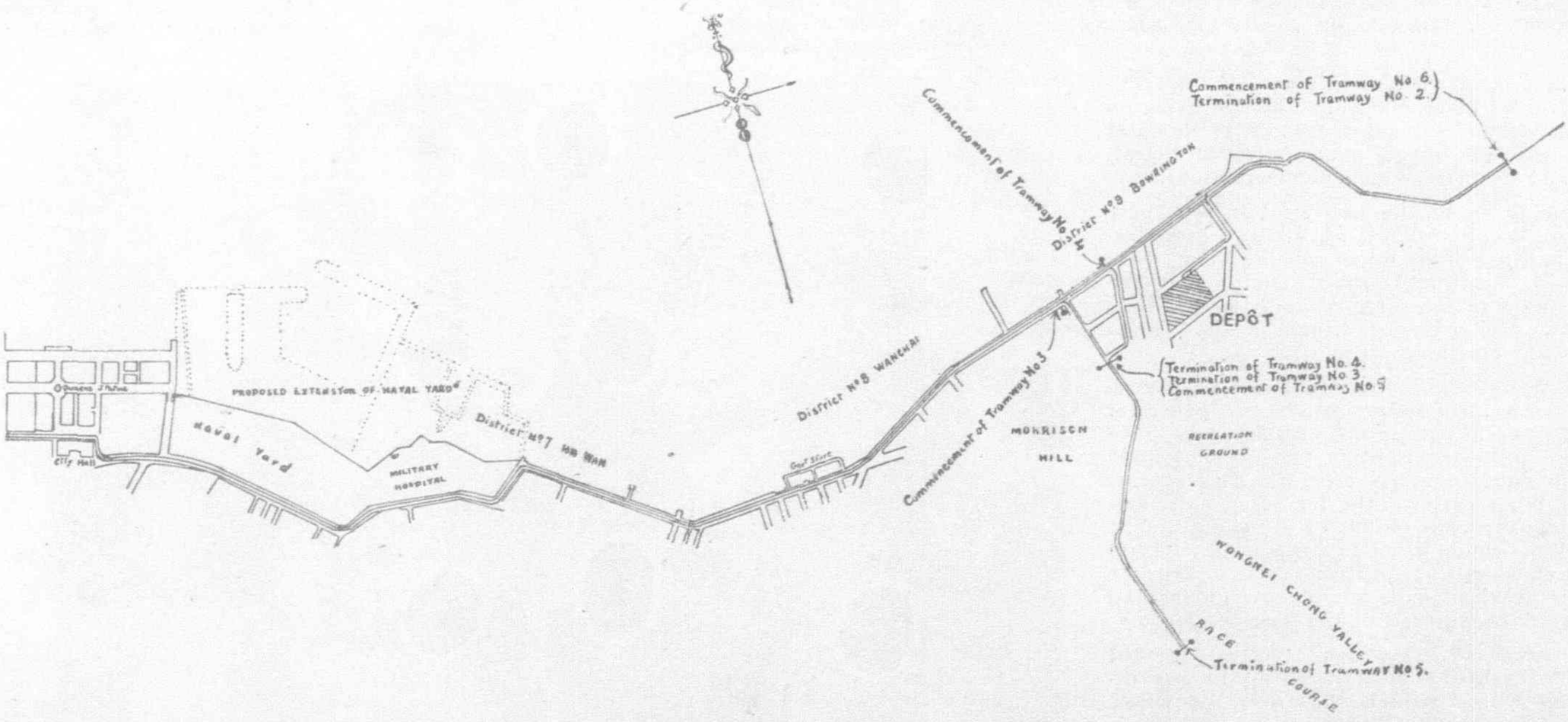
The feeder cables were supplied by the Callenders Cable and Construction Company and laid on the solid system. In addition to the main feeders running east and west from the power station a return 37/13 booster feeder has been laid in each direction to within a mile of the two distant termini, where it is connected to the rails; it also makes connection with the rails at each feeder pillar. A three core pilot wire has also been laid from the power station to each terminus, one core being connected up for testing purposes and the remaining two cores being used for telephone service.

The generating station is as nearly as possible in the centre of the system, a convenient site having been obtained alongside the Bowrington Canal, from which water for condensing purposes is obtained and which enables coal and materials to be delivered by barges direct at the site. The only objection which could be found with the site lay in the fact that a very few years ago it was reclaimed from the sea and consequently no good foundation could be obtained for either buildings or machinery. However, as it was the best site obtainable in all other respects this difficulty had to be overcome, and efficient foundations were obtained by the driving of over five thousand piles. These were spaced so as to support the whole

HONGKONG TRAMWAYS: CAR BARN.



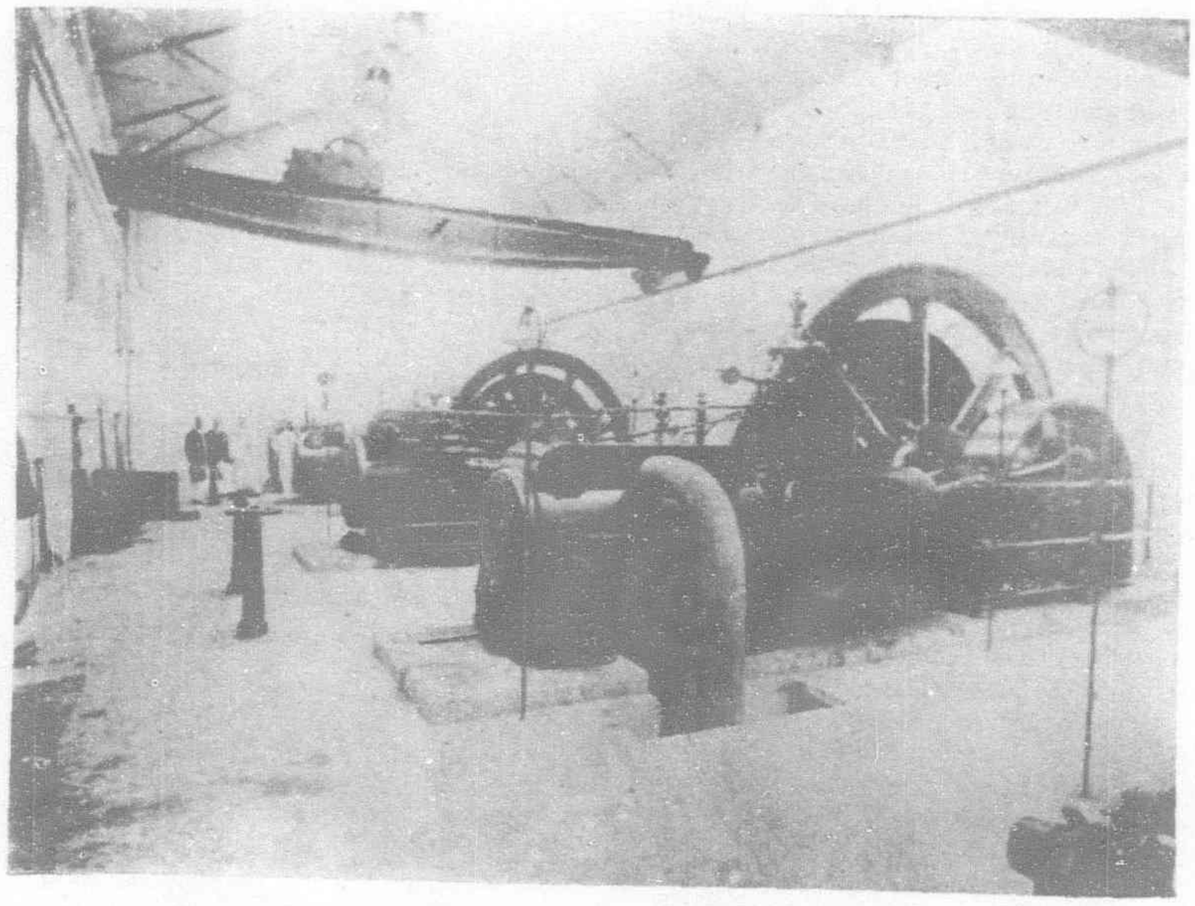
HONGKONG TRAMWAYS: BOILER HOUSE.



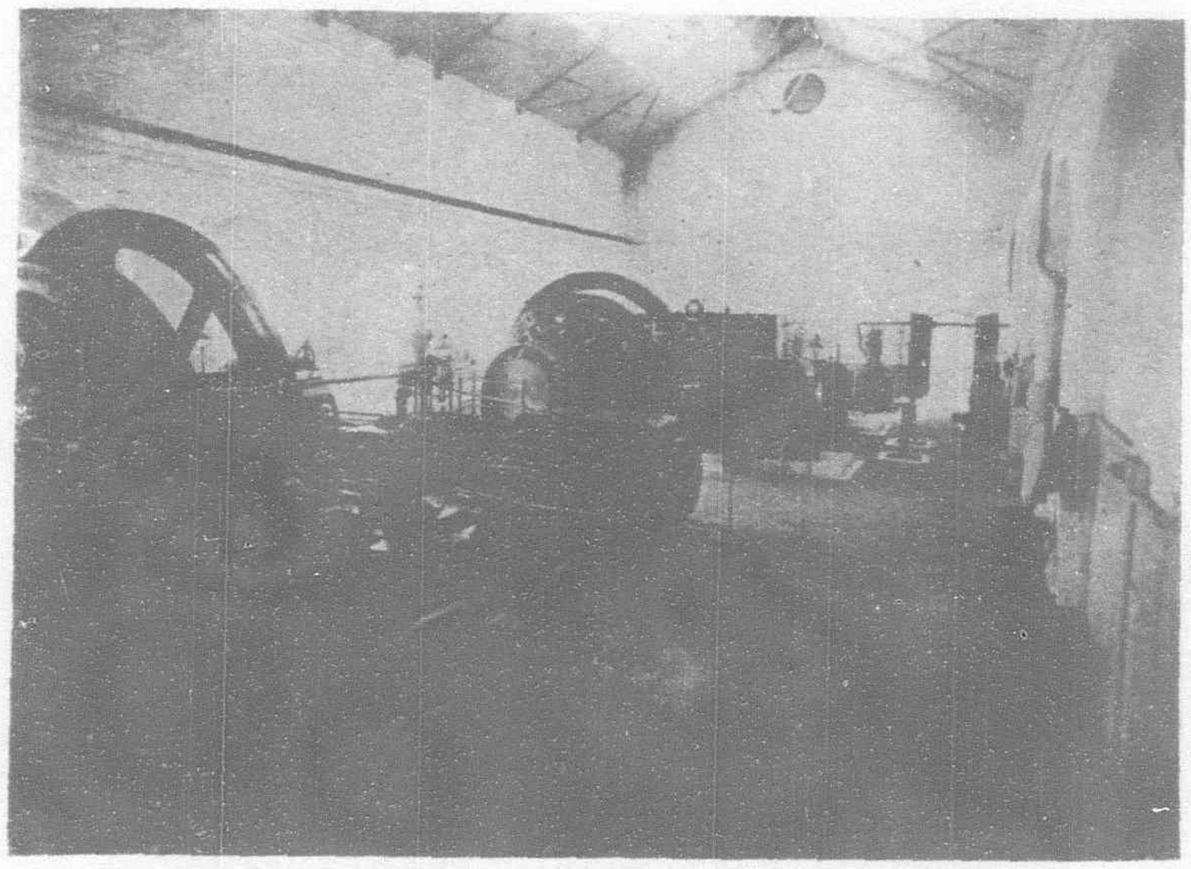
PLAN OF LOWER STREET SYSTEM OF HONGKONG SHOWING EASTERN SECTION OF TRAMWAY AND HAPPY VALLEY BRANCH. FROM COMMENCEMENT OF TRAMWAY NO. 6. EASTWARD TO SAIKIWAN THE ROAD IS SINGLE TRACK, WITH TURNOUTS AT REGULAR INTERVALS.

weight of the buildings themselves, the ground, which greatly varied in solidity, being left as an additional factor of safety. China fir poles, 15 feet in length and 5 inches in diameter, were used for the buildings and machinery, special 7-inch poles, 18 feet in length, being used for the chimney foundation.

The depot comprises engine-room and basement, boiler-house, car-shed and machine-shop, smithy, paint-shop and carpenters' shop, and also offices. The engine room, which is lofty and well lighted, contains two continuous current, direct connected railway generators of the multipolar type, compound wound, giving a potential of 550 volts, and making 100 revolutions per minute. They are designed to run either separately or parallel. The generators are keyed direct on the main shaft of the engines, which are of the horizontal cross compound type, each engine being equal to a maximum load of 557 brake horsepower. The engines, built by Yates & Thom, are each provided with a Wheeler surface condenser of the Admiralty pattern, and may be worked either condensing or non-condensing. The condensed steam is conveyed to the hot well, to be again used for boiler feed. The condensers are fixed in the basement below the engine room, as also are all the steam, exhaust, circulating and other pipes, thus leaving the engine room



HONGKONG TRAMWAYS: ENGINE ROOM.



HONGKONG TRAMWAYS: ENGINE ROOM, SHOWING SWITCHBOARD.

free and open. Circulating water for the condensers is obtained from the Bowrington Canal, which is alongside the site, the water first passing through pumps fitted with gratings and strainers to exclude obstructions.

In addition to the two traction sets there are two smaller plants for arc and incandescent lighting of the depot, one set being driven by a small high speed engine and the other by a motor running from the 500 volts circuit. The lighting circuit is supplied at 100 volts pressure.

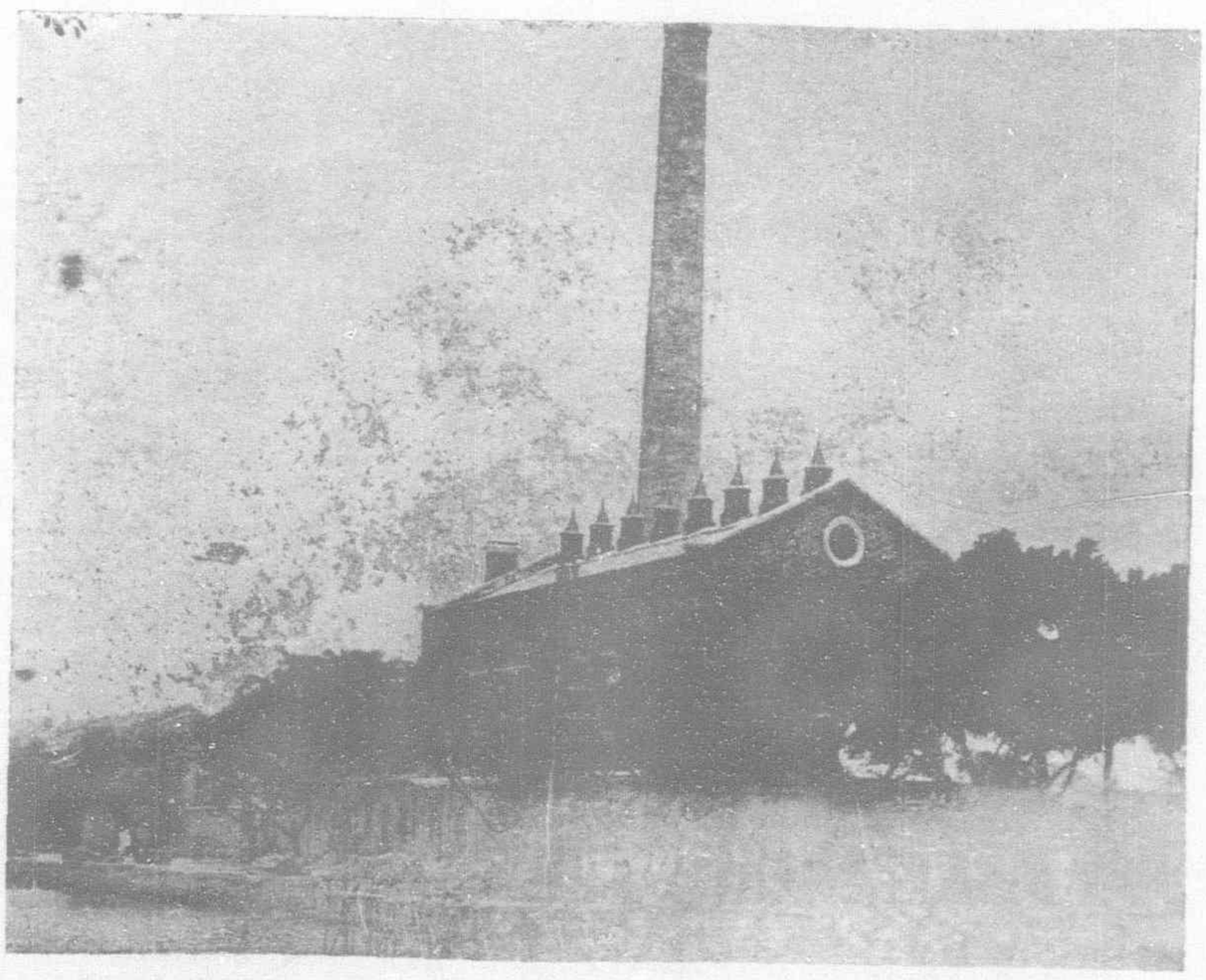
The switchboard, consisting of nine panels, includes a main station panel, two generator panels, two feeder panels, one Board of Trade panel, and three lighting panels. The main station panel contains recording instruments of the latest pattern, the recording wattmeter showing the total output of the station. The Board of Trade panel is arranged for receiving test wires from different parts of the line and is provided with instruments for making all the tests required by the Board of Trade.

An overhead traveling crane is provided capable of lifting and traversing in any direction a load of ten tons over the whole area of the engine room.

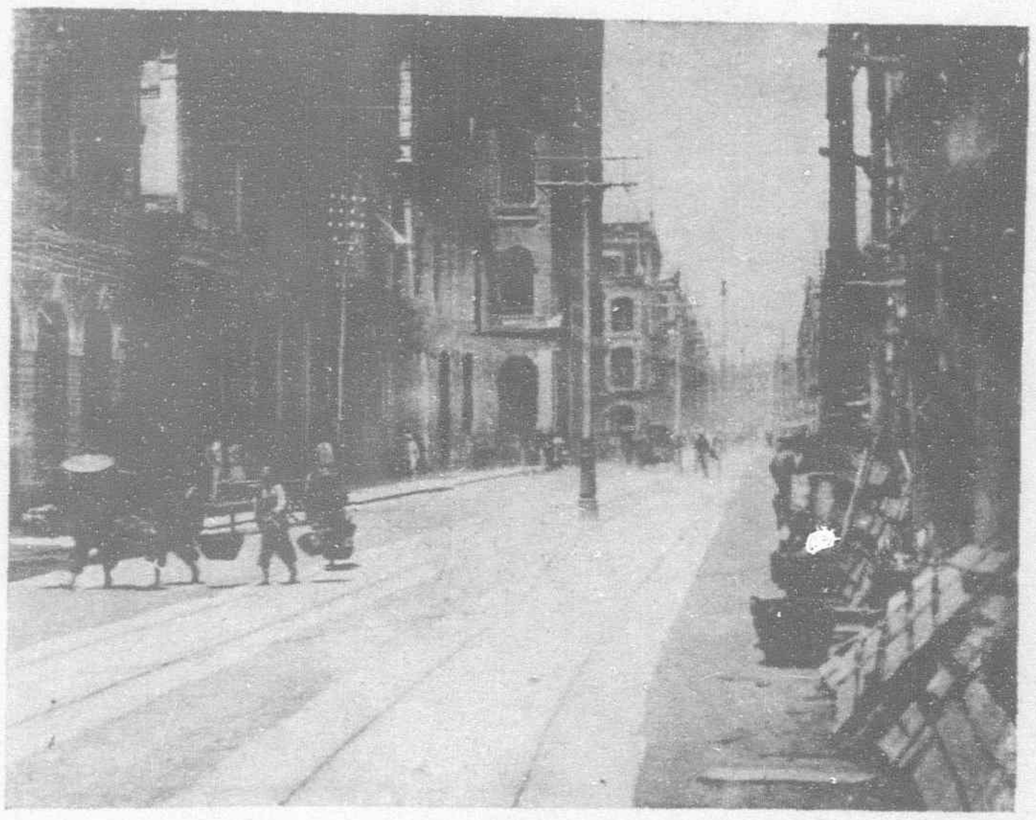
The boiler house, which is at a lower level than the engine room, contains two double drum, water tube boilers of the Babcock and Wilcox type, arranged to burn ordinary Japanese engine slack. Each boiler has 3,654 square feet of heating surface, evaporates 12,000 lbs. of water per hour, and works at a pressure of 160 lbs. per square inch. In addition to the steam and water gauges each boiler is fitted with a spring safety valve and a dead weight safety valve. Water is supplied to the boilers by two Blake and Knowles feed pumps, which take water from either the storage tank or the hot well and feed the boilers through the economizer. This, manufactured by Green of Wakefield, contains 288 pipes, and, by utilizing the waste flue gases to raise the temperature of the feed water, effects a great saving in fuel.

In case of mishap the economizer may be cut out of use, the flue gases being conveyed to the chimney by means of a bye pass, or auxiliary flue, and the feed water being pumped direct into the boilers without passing through the economizer tubes. Two feed water filters are supplied and all water passes through one or other of these before entering the boilers.

The chimney, which is circular, is built of brick and is 153 feet in height. As Chinese bricklayers are unaccustomed to this class of work, it presented greater difficulties in con-



HONGKONG TRAMWAYS: VIEW OF POWER HOUSE AND COMPOUND.



HONGKONG TRAMWAYS: POLE LINE CONSTRUCTION, ALSO SHOWING COMPLETED CONCRETE ROADBED.

struction than any other portion of the work and, as Hongkong is subject to typhoons of noted severity, exceptional care had to be taken with both the foundations and the careful building of the shaft. With the exception of the foundations and the chimney cap, the whole of the brickwork is built in lime mortar of peculiar composition, as is also the brickwork of the buildings. Instead of employing sand, as is usual in the mixing of lime mortar, a local earth of a red color, termed locally "red earth," was mixed with the lime, and water added to bring the whole to the right consistency for mortar, with which the bricks were laid. As the work was being carried out by English engineers there naturally existed great prejudice in departing from the beaten path, and this method of procedure was not adopted until exhaustive tests had been made, all of which proved that lime mortar made with red earth gave far better results than that made with sand, conclusively proving what the local architects had known for years. In the mixing of lime concrete the red earth was also substituted for sand. The explanation of this appears to be that the lime is neither thoroughly burnt nor properly slaked; it if were possible to obtain in Hongkong lime of the English standard of quality there is no doubt that the practice of using red earth instead of sand would speedily die out. The red earth consists of granite in a very advanced state of decomposition.

The car shed, which is a rectangular building 200 feet in length, contains six lines of track and gives accommodation for 35 cars. The roof is of iron, in two spans partly glazed and provided with louvres, giving plenty of light and ventilation. Inspection pits run the whole length of the shed.

Twenty-six single deck motor cars are provided, ten being of the combined type with an enclosed portion in the centre and an open platform provided with seats, at either end, these cars being reserved for first class passengers. The remaining 16 cars are of the open cross bench type, commonly known as toast racks, and are for the conveyance of second class passengers.

The over all length of the cars is 29ft., the total width is 6 feet 6 inches, and the wheel base is 6 feet 6 inches.

The first class cars have a seating capacity for 32 passengers and the second class cars for 48 passengers. Each is mounted on a Brill 21 E truck, fitted with two four-pole series wound single reduction ironclad motors of 25 horsepower each. The cars are driven from either end, each end being fitted with a series parallel controller.

In addition to the hand brake in general use a very powerful emergency brake can be formed by short circuiting the motors on themselves and thus converting them into generators. The trolleys, which are of the lateral type and provided with a swivel head, are 16 ft. 6 in. in length and enable the trolley wire to be fixed ten feet away from the centre of the track where necessary. The car bodies were built at Preston by the Electric Railway and Tramway Carriage Co. Ld., and were shipped to Hongkong in sections, where they were fitted together and connected up in a very short space of time.

At one end of the car shed is a well-equipped workshop containing screw cutting gap lathe, wheel lathe, wheel press and drilling machines, the whole being driven by a 500 volt motor.

A suitable smithy, carpenters' shop, and paint shop are also provided.

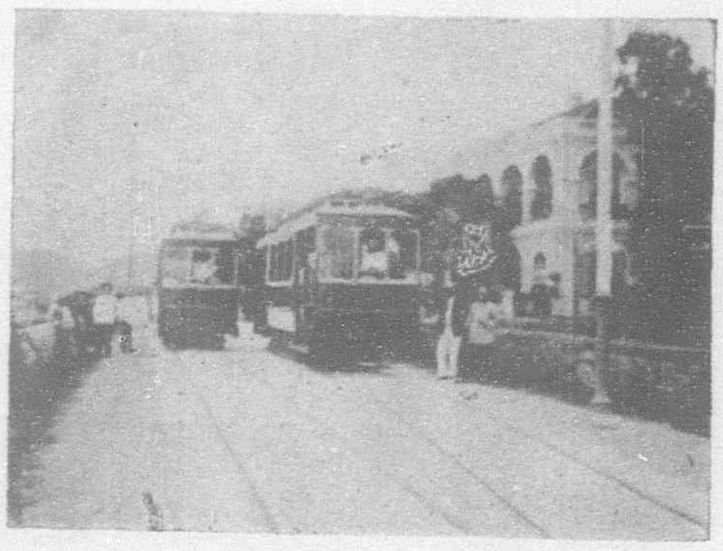
The management of the line is under the able direction of Mr. J. Gray Scott, the late popular Municipal Electrical Engineer of the Croydon Corporation, which position he resigned to take up his duties in Hongkong.

PATENT SLIPWAY AT SANDAKAN

The new slipway at Sandakan marks a great stride in the ship-building and repairing trade of North Borneo.

We have obtained the following particulars from Mr. R. W. Dale, the engineer in charge of the China-Borneo Company's ship-building and engineering department.

The slipway, which has been constructed by the China-Borneo Company to the designs of Mr. Dale, is situated on the shore to the west of Fort Pryer, near where the old Sandakan Pier used to stand. The site is a most favorable one for the purpose in hand, owing to the unusual depth of water, at a short distance from high water mark, which will allow ocean steamers to come alongside the pier, on which will be erected a 15-ton crane shortly expected from England.



HONGKONG TRAMWAYS: TYPE OF CARS.

The cradle is capable of accommodating vessels of 140 feet long and 400 tons displacement.

The cradle consists of a framework, 145 feet long and 25 feet wide, to which are fixed iron rollers, which run upon steel rails, the rails being supported by rail bearers of Billian which (in turn) rest upon cross sleepers of Billian. A foundation of rubble stone and at some places solid rock support the sleepers.

The inclination from the engine house to the bottom of the ways is of one in twenty-nine; and to draw the cradle with its load up this incline, a powerful hauling gear is provided, worked by an engine of 50 horse-power. The method of hauling is of the wire rope system, the rope, which has a breaking strain of not less than 120 tons, being coiled upon a large drum.

The work in connection with the laying of the lower portion of the foundation below low water mark has been a matter of great care and anxiety to Mr. Dale. A cofferdam had to be erected for this portion of the work to keep out the sea water. The dam consisted of a double lining of 12 in. x 3 in. planking, suitably supported and spaced from 2 ft. to 3 ft. apart according to depth, the space between being rammed with blue clay, which was obtained from Barn Hill, half a mile away, and which proved exceedingly effective in keeping out the sea when the dam was pumped dry. Owing to the sea bed on the Sandakan side of the dam being composed of coral, it was found impossible at the lower end of the dam to keep the dam dry at high tides, the sea breaking through on a few occasions far below the structure of the dam. It was then decided to flood the place, to a certain extent, during high tides. This led to nightwork and stoppages during the day, which have prolonged the completion of the work considerably. Another difficulty met with was the unsuspected presence of fresh water springs, which were stopped as the excavation proceeded.

Two centrifugal pumps were employed to pump the dam and keep it dry. The larger pump (formerly used on the dredger) being a twelve inch one, and capable of throwing 700 tons of water per hour; the smaller one was kindly lent for the occasion by a prosperous local firm.

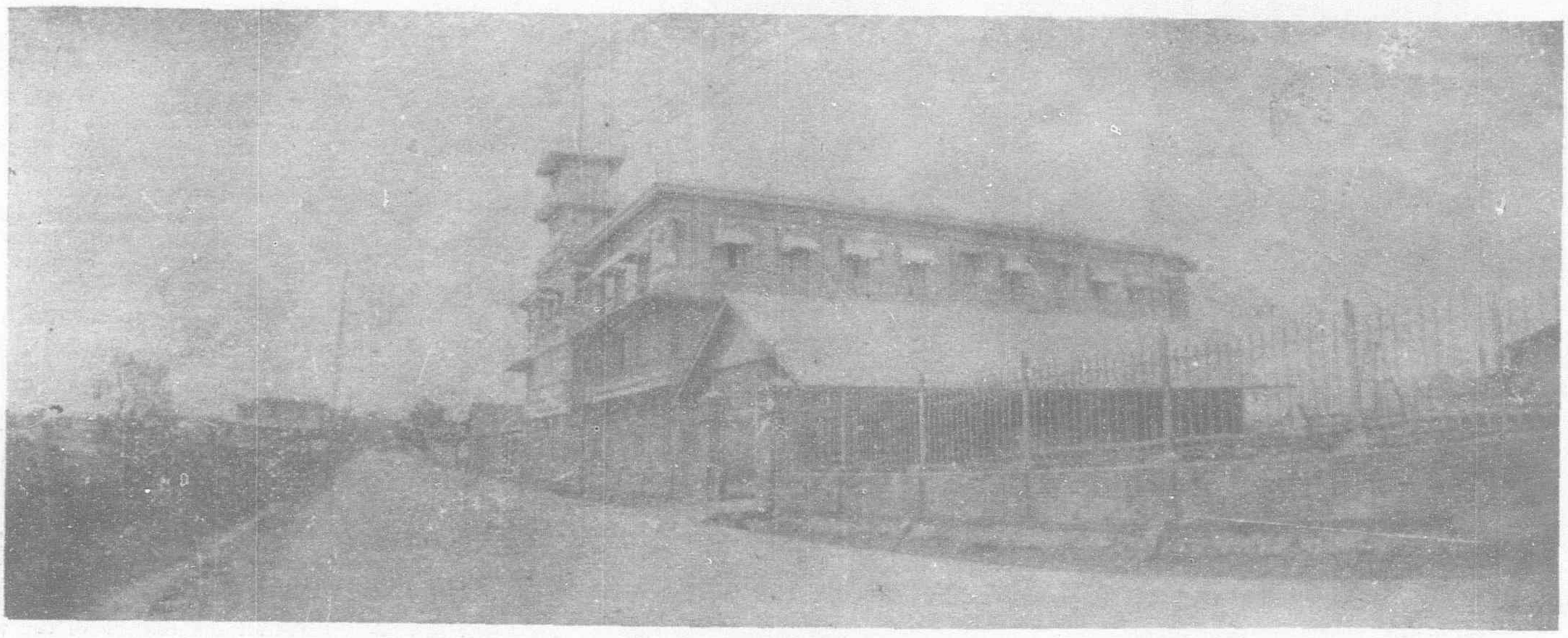
The work shops are fitted with every appliance required in a ship-building yard, a noticeable feature in the smithy being a steam hammer capable of welding an eight-inch shaft.

The present slip is capable of taking up only one vessel at a time, but the engineer is now arranging to adopt a method by which the single set of hauling gear and cable can be made to haul up two vessels, *i. e.*, the first vessel is drawn up and then lifted by hydraulic power from the cradle, and placed upon a siding, leaving the cradle free to descend the way to take up another vessel.

With their present yard and plant the China-Borneo Company will now be able to undertake the construction of far larger vessels than formerly. The great advantage of building a ship in North Borneo is that the timber used is not only of excellent quality for ship-building purposes, but it is cheap, and shipowners may rely upon obtaining strong sections, frames, keelsons, etc., unobtainable where timber is dear. We are glad to say that, up to the present, all the boats built in our Sandakan yards have obtained a character for strength which we understand is well deserved, and which we have no doubt will be maintained by the China-Borneo Company.—*Br. North Borneo Herald.*

COMPANIA GENERAL DE TABACOS DE FILIPINAS

"LA TABACALERA"



NEW OFFICES OF THE COMPANIA GENERAL DE TABACOS DE FILIPINAS, MANILA.

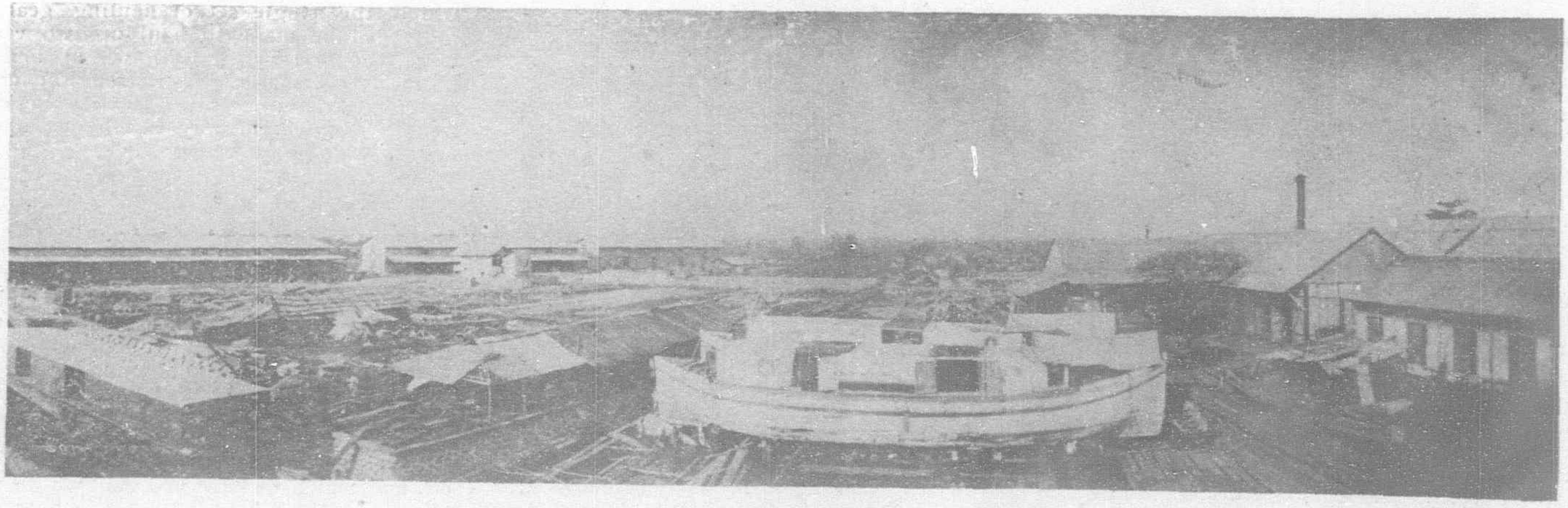
Probably the most important commercial enterprise operating in the Philippines is the company whose title heads this article. As an example of the enterprise of Spanish capital it stands on a par with the Spanish Transatlantica Company, who have been foremost in extending Spanish trade in her former colonies and other countries. The Marques de Comillas, son of Antonio Lopez, founder of the great steamship line and its present head, is also president of the "Tabacalera," and leagued with him are some of the foremost figures in Spanish finance and politics. In fact, the two companies have enjoyed the full and well-merited confidence and support of their government and the royal family, and it was due entirely to the splendid organization of the steamship fleet that Spain was enabled to transport 200,000 troops to Cuba, during the early and trying days of Cuban insurrection, without having to charter foreign vessels to assist in the great undertaking. This feat, we believe, as yet stands unparalleled in modern history, for although there may have been more striking and spectacular operations in conveying an army to the seat of war, yet the distance must be taken into consideration, and due allowance made for the resources of the larger countries, who notwithstanding were compelled to rapidly organize a transport service by chartering and converting foreign ships to their needs. The same spirit of commercial enterprise characterized by the steamship company is reflected in the operations of the "Tabacalera," as the same master intelligence guides them both. The vast enterprise having its ramifications in all cities and corners of the Philippines was established in 1882. Its prosperity under the Spanish Government was due largely to the tobacco monopoly held in Spain, and the large contracts secured throughout Europe, especially in Austria, for the supply of tobacco to the army. Its capital has been gradually increased until at present it stands at £3,000,000 sterling. With headquarters at Barcelona and Manila, and branches in the leading cities of Europe and the East, and local branches throughout the Philippines, its business increased rapidly.

To the great profits of the tobacco business was added the increment from the larger commercial sphere of general exporters and importers, in the former line handling a large proportion of the copra, rice, sugar, and other exports of native production, and importing the staple articles of necessity from Europe. But it is chiefly in the tobacco line that the firm is best known. Its brands of cigars and cigarettes are standard throughout Europe and the East, and in many cases preferred to many of the famous Havana brands. Its "Flor de Isabela" cigar is in many respects equal to the best Cuban manufacture, the difference being purely a matter of individual taste.

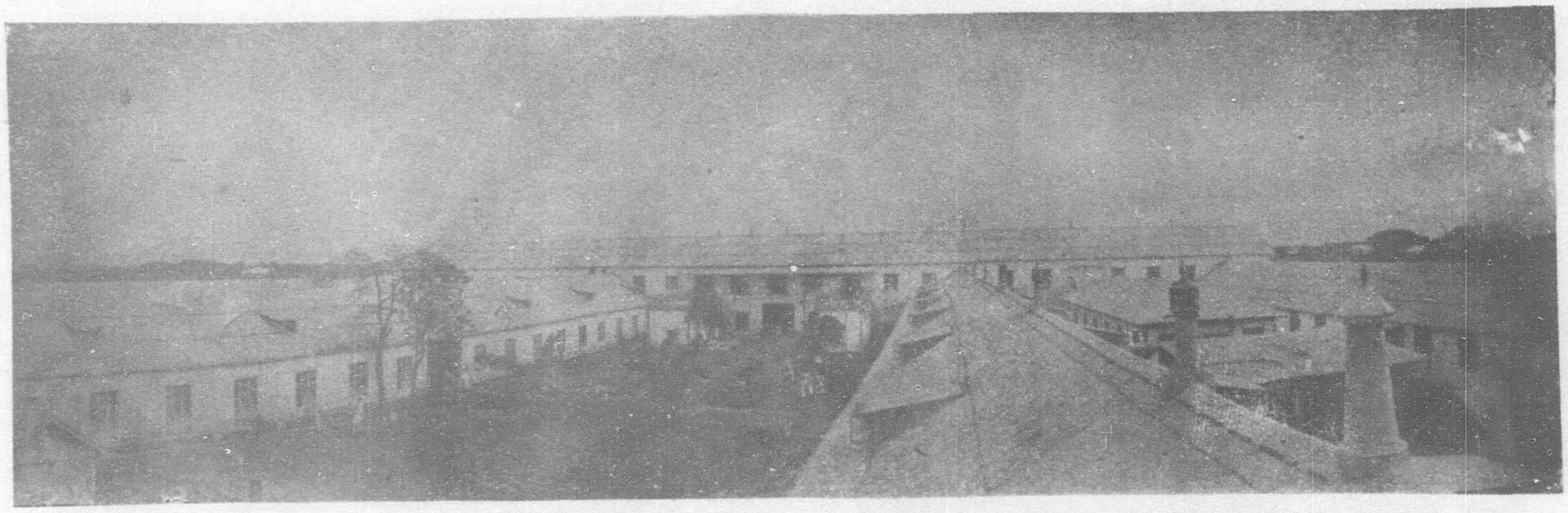
The establishments and factories of the company are the largest and most extensive of their kind in the world. This statement is made advisedly, as the writer is thoroughly familiar with all the factories of Havana, the largest in America.

Its original establishments in Manila were totally destroyed by fire in June of 1903, but despite this blow, from which few companies would have survived, in eight days they were in a position to continue the business and fill their large orders and contracts. Nothing better demonstrates the spirit actuating the operations of the company, and is fully equal to the splendid showing made by the "Transatlantica." The reconstruction of the buildings along modern lines was immediately proceeded with, and with fireproof material. Our views give a fair idea of the extent and importance of the structures, which consist of a main building with 10 wings, with ample room for 5000 workmen.

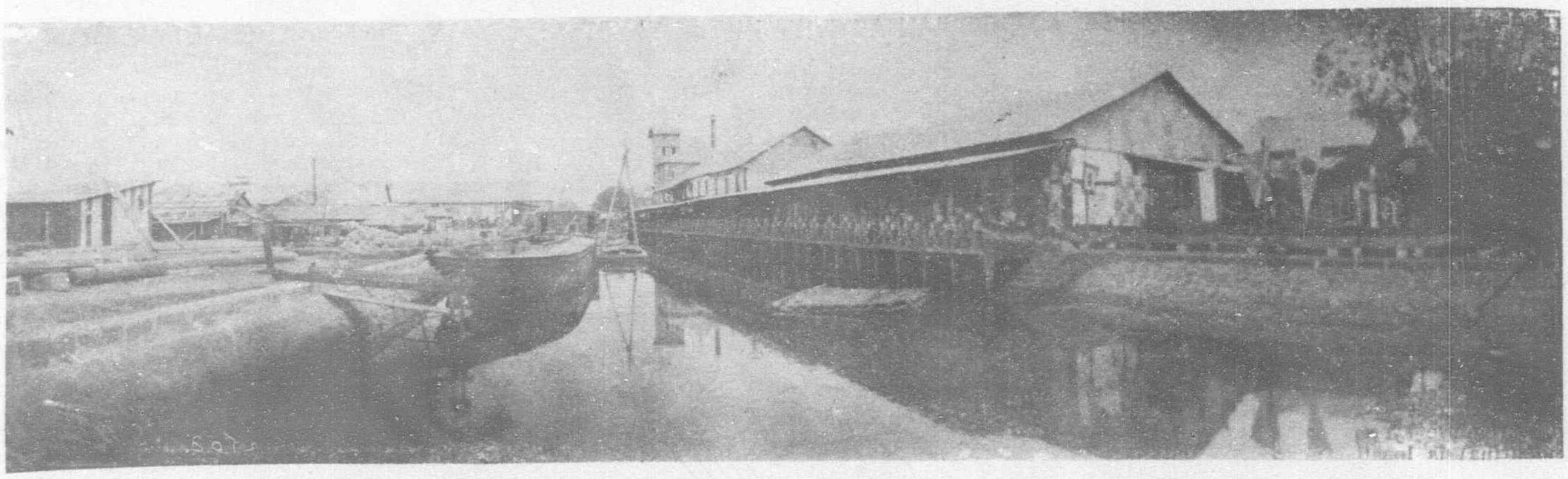
The main building measures 122 by 12 meters. The elaboration of the tobacco into cigars is



SLIPWAY AND WAREHOUSES ON THE PASIG RIVER.

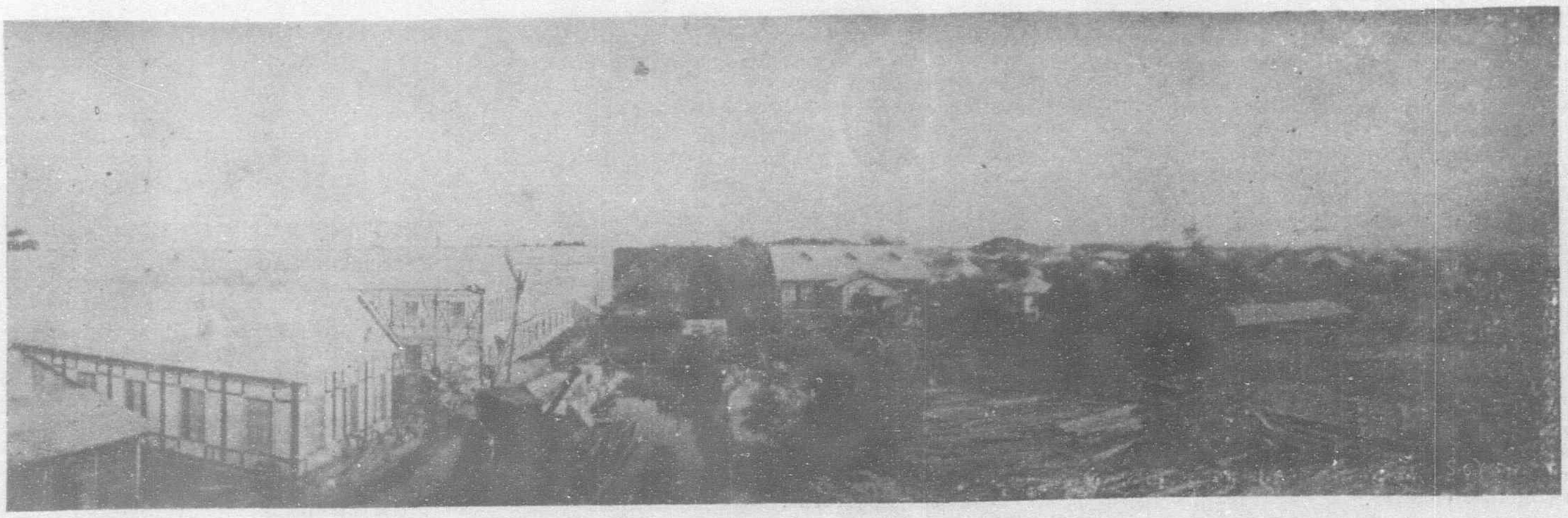


VIEW OF "FLOR DE ISABELA" FACTORY FROM END WING.

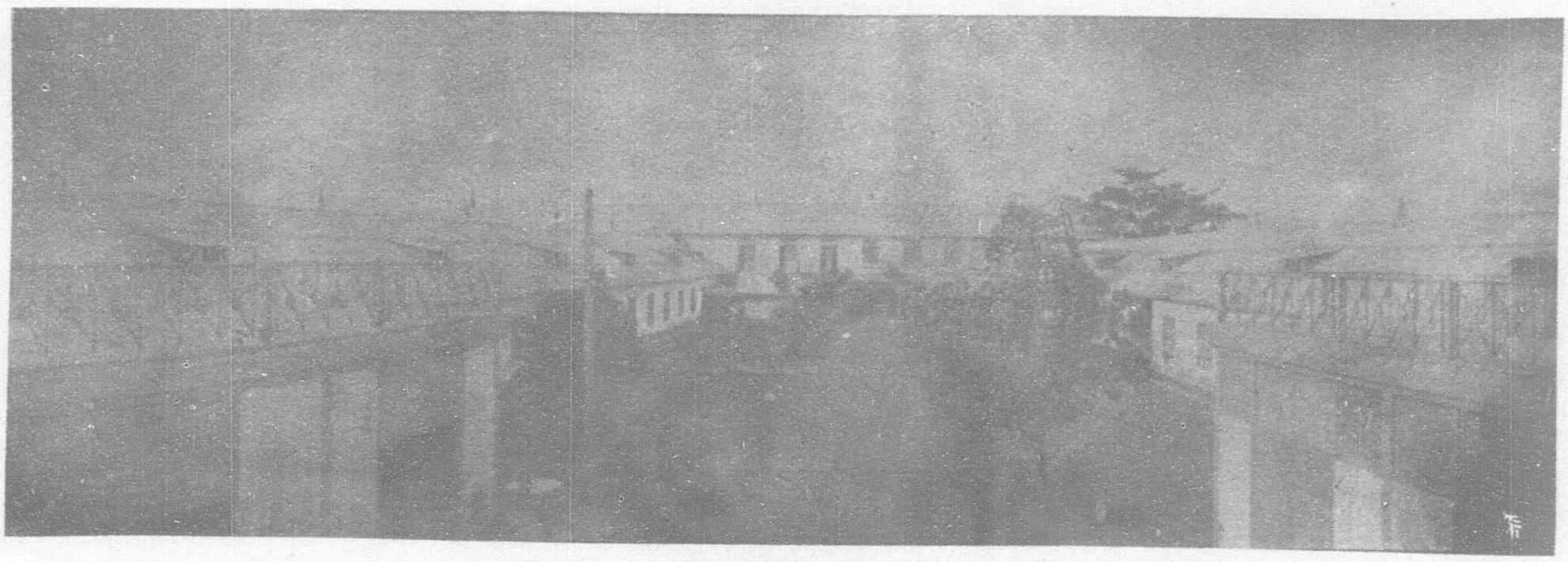


"LA CLEMENTINA" DISTILLERY.

WAREHOUSES.



SIDE VIEW OF "FLOR DE ISABELA" FACTORY, SHOWING CANAL.



"FLOR DE ISABELA" FACTORY, INTERIOR VIEW.

carried on under the Cuban system, while for the poorer grades for native consumption the workshops are run according to the Philippine idea and custom. The most modern machinery is employed wherever necessary, and several new cigarette machines operated by electricity are constantly at work to meet the demand.

The warehouses in connection with the factories have a superficial area of 10,000 square meters, and the movement of merchandise and products of the country through these channels represents a value of more than $10,000,000 a year. Several modern hydraulic presses operated by electricity are installed in the warehouses for the baling of hemp.

In addition to the great tobacco factories and warehouse system, a large distillery (La Clementina) is located nearby, which has a capacity of 20,000 liters per day. The new office building and headquarters of the Company, shown in the illustration appearing at the head of this article, is undoubtedly the best in Manila, and is a great ornament to the city. Built of steel, with brick walls, it dominates the entire section of the city in which it is located. The interior is finished in the rich hard woods of the country, and the scheme of decoration is elaborate and costly.

In the rich and famous Cagayan valley the Company possesses some of the best tobacco lands and plantations. The utmost care is taken in the cultivation of the leaf, and every effort made to improve its already high quality. European managers, brought from Sumatra, are in charge of many of these estates, and under their intelligent supervision a leaf is grown rivalling the Sumatra product in fineness and texture.

The interests of the company are so various that our space will not permit of a full and adequate description; sufficient to say that every resource is fully worked. An important timber business is carried on, the company operating entirely on its own lands. The immense scope of its activity throughout the Islands, extending to all quarters, from north to south, has necessitated the acquisition of its own transportation facilities, and a fleet of 15 steamships and some 50 launches are actively engaged in inter-island traffic. The management of the company in the Philippines is under the direction of Sr. D. Andres Correa, who is ably seconded by Cosme de Churruca and José Rosales, the sub-managers, and Vicente Muntadas, the popular secretary appointed from Spain. Although the majority of the clerical force is Spanish and native, the company is liberal in its employment of foreigners of any nationality, and have many in the service.

As is natural, the "Tabacalera" represents the interests in this part of the world of its sister company, "Transatlantica," the one link binding the Spaniards of the Islands to the mother country.

GERMAN ACTIVITY IN THE YANGTSZE VALLEY

The *Times* recently published the following letter from a correspondent using the *nom-de-plume* of "Yangtsze":—

I have received from a trustworthy correspondent in China two documents which seem to me to be of considerable public interest at the present moment, as affording conclusive evidence of Germany's activity in what we were told a few years ago by our Government was the special sphere of British interests in China. The one is a translation of a petition addressed by the gentry of Hangchow, in the province of Chekiang—*i.e.*, in the heart of the Yangtsze Valley—to the Governor, propounding a scheme to connect their city with Shanghai by a railway for which half the capital would be provided by a German firm, in order "to balance the power" which the British might obtain through a monopoly of concessions in that region. The influences which prompted the gentry of Hangchow to devise this scheme for averting a British "monopoly" appear pretty clearly from the fact that they are able to lay before the Governor, together with their petition, "the regulation drawn up between us and the said German firm and the German Consul's guarantee for the required capital."

The other document is a translation of this "guarantee," given by the German Consul-General at Shanghai. The "guarantee," which is headed "Dr. Knappe, Consul-General for Germany, in the matter of guaranteeing a loan for a sum of 2,000,000 taels for the joint building of a railway by foreigners and Chinese," states, after describing the project:—

"I have communicated the above matter to the German Minister in Peking, requesting that he will communicate it to the Ministers of the Board of Commerce, for them to memorialize the Throne and have the matter placed on official record. . . . In case the said German firm should afterwards make excuses and postponements and not have the full amount (Tls. 2,000,000) ready, I, the Consul-General, will, in all matters, be responsible for them." This scheme, cleverly as it was engineered by the Germans, has not, it seems, come off. For the Chinese are not, as a rule, at present very much enamored of German methods, which they have no wish to see extended from Shantung to Chekiang. But it shows how little Germany, who has insisted so successfully for her own benefit on the right of first opportunity in Shantung, is inclined to recognize any such right to us in the Yangtsze Valley. Verily Count von Bülow knew what he was about when he called the Anglo-German Agreement of 1900 the "Yangtsze Agreement."

THE INTERNATIONAL HARVESTER CO.'S HEMP DEAL

It is stated from authoritative sources that The International Harvester Company, one of the largest corporations of the United States, has acquired the controlling interest in the firm of Macleod & Company and will in the future figure as an important factor in the hemp trade of these islands. The company, which consists of the McCormick Reaper Company, the Deering Reaper and Harvester Company, and several minor manufacturing companies, is the largest user of hemp in the United States. More than 25 per cent of the hemp of the world is manufactured into binder twine by the International Harvester Company, which has up to the present bought the fiber in the open markets of New York and London. The International Harvester Company is in close relation with the "cordage trust," and between the two they are able to absorb the greater part of the hemp and sisal fiber produced throughout the world. The former company has a capital in excess of $100,000,000.

The deal was consummated by Mr. H. Daniels, who spent three months here looking over the field. He returned to the United States on the last trip of the *Mongolia* from this port.

The firm of Macleod & Company was established in 1868 by the late Neil Macleod, who was succeeeded in the management by Mr. Alex. Macleod, who retired from the management of the company some years ago. He was succeeded by William S. Macleod, who retained an active interest in the firm and who will continue to act as manager. The company handles about 150,000 bales of hemp per annum and is one of the largest dealers in the fiber in these islands. The International Harvester Company uses in the neighborhood of 250,000 bales of Manila hemp yearly and it is expected that practically all of this amount will pass through the hands of the firm of Macleod & Company.

TO REPRESENT MANILA INTERESTS AT WASHINGTON

Dr. Ariston Bautista, president of the Germinal cigar factory, has been selected to represent the tobacco interests at Washington with a view to securing a reduction in the tariff. This selection was made by a meeting of representative tobacco men at the Insular cigar factory.

PHILIPPINE RAILROAD DEVELOPMENT

A special cablegram to the *Manila Times* says: "A syndicate is being formed to construct railways in the Philippine islands. The articles of incorporation will be submitted to Secretary of War Taft for his suggestions, upon his return from Panama. The corporation, which consists of New York capital, is willing to undertake the building of railways in Luzon and other principal islands of the Philippine archipelago if the Philippines government will guarantee a fixed rate of profit upon the money invested."

NEW DRY DOCK AT TONGKU.

This new dock has been built and completed this year for The Tientsin Lighter Co., Ltd., for whom Messrs. Butterfield and Swire in Shanghai are the Eastern Managers. As will be seen from the photograph there is in conjunction with the dock a large basin, designed with a special view for the accommodation of the Company's tugs and lighters during the winter season.

The actual dimensions of the dock itself are as follows:—

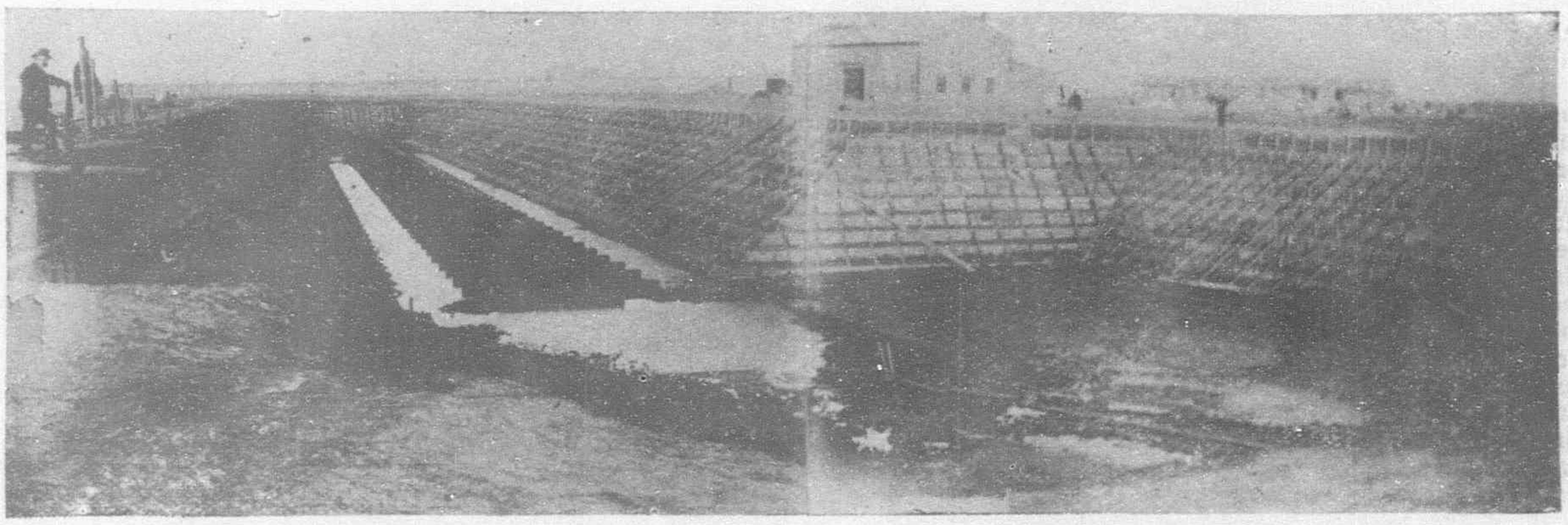
Length on blocks	436′.0″.
Width on blocks	50′.0″.
Width at coping	100′.0″.
Depth on blocks (H. W.)	12′.0″.
Total depth of dock	23′.0″.
Width of dock gate	50′.0″.
Height of blocks	4′.0″.

It will be seen from the above dimensions that the new dock is capable of taking a large steamer, while the depth, which has of course been governed by the Taku bar, is sufficient to accommodate any vessel that can cross the bar. The dock can be partly emptied by gravitation, and in addition to this a powerful centrifugal pump has been installed, capable of emptying the dock in six hours. The whole of the machinery in the dock workshops is of the most modern description, everything being electrically driven, the Company having installed their own electric plant for power and light.

The dock is constructed of timber, Oregon pine being the wood most used. The nature of the soil, which is an alluvial deposit of a clayey nature, locally known as "mud" (safe load about 0.75 ton to the square foot), made the use of stone out of the question, and nearly 60,000 feet of timber have been used in the work; about 750,000 cubic feet of soil have been excavated, and 4,500 piles have been driven.

In the immediate vicinity of the dry dock a large basin has been constructed to accommodate the Company's Lighter fleet during the winter; this is about 4,000 square yards in area, and is emptied by gravitation. The fleet is at present composed of five new steel lighters 175′.0″. long, with a capacity of 600 tons; twelve of a precisely similar type, but 160′.0″. in length and 500 tons capacity; and four new and powerful tugs. As during the winter season at Tongku every vessel has to be docked for safety, the need for this large space is apparent.

Residences for the European and native staffs, stores, tanks, etc., have all been carefully thought of and provided for, and as the Company has its own railway siding in direct communication with Pekin, Tientsin, and the North. Altogether the whole of the Company's plant is of the most modern and best description, and everything in any way necessary for the efficient working of the Company's business has been provided.



NEW DRY DOCK AT TONGKU, BUILT BY BUTTERFIELD AND SWIRE.

GREEN ISLAND CEMENT CO., LD.

An extraordinary general meeting of the Green Island Cement Company, Limited, was held at the Company's office, Hongkong, on the 26th November.

The meeting had been called for the purpose of passing the following resolutions:—

That the Capital of the Company be increased from $1,000,000 (divided into 100,000 shares of $10 each) to $1,500,000 (divided into 150,000 shares of $10 each) by the creation of 50,000 new shares of $10 each to be offered and, if accepted, to be allotted to the persons constituting the shareholders of the Company according to the Company's Register of Shareholders on the 28th day of February, 1905, at a premium of $10 for each and every single share of such 50,000 new shares in the ratio and proportion of one new share for every two old shares in the Company held by the respective shareholders thereof; the amount payable on each of such new shares respectively (including the said premium of $10 per share) to be paid as to one equal half part thereof on the 31st day of March, 1905, and as to the remainder thereof (including the balance of said premium) on the 30th day of June, 1905.

And that failing such allotment as aforesaid the said new shares be disposed of by the General Managers in accordance with the Company's Articles of Association.

And that for the purpose of facilitating the carrying into effect of the above Resolution the Transfer and other Books of the Company be closed for the space of seven days as on and from the 1st day of March, 1905.

The Chairman said:—Gentlemen, before I proceed to put the resolutions just read to the meeting I will, as briefly as possible, explain the necessity for more capital. We have added to and extended the capacity of the factories here and at Macao until we can go no further. We have now reached a total output of 34,000 barrels per month, but the demand has more than kept pace with our enlargements so that, in spite of all, we have still to suffer the chagrin of seeing good orders go past us. We have, therefore, to practically begin an additional factory. After very thorough study of the whole question we have decided to put up a Rotary Plant instead of Aalborg Kilns as before. Rotary Kilns are now giving great satisfaction in Europe and America. To begin with, the first cost of the plant is considerably less and in our case the saving is still greater, as we can take advantage of a good part of our present installation for the working of these Kilns, while as compared with the old Kilns the quality of the cement produced, though not on the whole any higher than at present, will recommend it to a particular section of our customers. Our Superintendent, Mr. Uldall, studied these kilns at home some time ago and recommends their adoption, and our Chief Engineer, Mr. Hewitt, being on a holiday, we took advantage of his presence in England to place orders for a two Rotary Kiln Plant complete, making, as far as possible, special arrangements for adding one Rotary Kiln or more if required later on. These two Rotaries will give us about 16,000 barrels per month additional, a large increase in proportion to the cost of the new plant, which we estimate will be something under $400,000. Our present overdraft with our bankers is $486,000 and there is the dividend which may be reckoned at not more than $200,000, so that altogether the proposed $1,000,000 new capital and premium will not be more than enough for our wants. We shall, however, be in a much stronger position, and, as the more we make the lower the cost, we should be able to produce our cement at a price which should defy competition. We have had an unusually good year, but we cannot count upon always having a large Admiralty Dock contract to fall back upon such as we have at present. It is never safe to prophesy unless one knows, but our profit this year should be about 40 to 50 per cent more than last year.

PARCEL POST TO MANILA

The Parcel Post convention between Japan and the United States of America is now extended to the Philippine Islands, and parcels will be forwarded under the same conditions as for the United States by means of the steamers of the Nippon Yusen Kaisha and Toyo Kisen Kaisha.

ADAMSON, GILFILLAN & CO. (LTD.)

This firm has been registered at London, Oct. 6, with a capital of £125,000 in £100 shares. The object is to acquire the business carried on by Adamson, Gilfillan and Co. at 2, Billiter-avenue, E. C., and by the branch houses or agencies thereof, viz., Gilfillan, Wood & Co., Singapore and Penang; to adopt an agreement with S. Gilfillan, W. Adamson, H. W. Wood, and J. Miller, and to carry on the business of general merchants, exporters, importers, general storekeepers, wholesale and retail traders, shippers, bankers, bankers' and shipowners' agents, carriers, insurers, estate and property agents, warehousemen, lightermen, contractors, builders, guarantors, wharf, dock, railway, and tramway owners or lessees, planters, miners, stock and share dealers, brokers, etc., in one share each, in London, Singapore, Penang, and elsewhere. The signatories are:—

S. Gilfillan, 2, Billiter-avenue, E. C.; W. Adamson, 2. Billiter-avenue, E. C.; H. W. Wood, 2, Billiter-avenue, E. C.; J. Miller, 2, Billiter-avenue, E. C.; R. T. Peake, 2, Billiter-avenue, E. C.; W. S. Coutts, 2, Billiter-avenue, E. C.; J. Somerville, 2, Billiter-avenue, E. C.

There will be no public issue. The number of directors is to be not less than two nor more than seven. The first are S. Gilfillan, W. Adamson, H. W. Wood, and J. Miller. The qualification is £2,500, and the remuneration £100 each per annum. The registered office is 2, Billiter-avenue, E. C.

INTERNATIONAL BANKING CORPORATION

REPORT TO THE STOCKHOLDERS.

NEW YORK, October 11, 1904.—The management submits the following report, together with the Corporation's fourth semi-annual statement of financial condition, that of June 30, 1904.

Since the report bearing date March 14, 1904, was sent to you the Corporation has established branches at Kobe, Canton, Cebu, and Panama, the first three being tributary respectively to, and operated in connection with, the larger neighboring offices at Yokohama, Hongkong, and Manila.

The expectation that, after the field of the Russo-Japanese war was defined, a revival of business in the East would follow has only lately been realized, and so has small bearing on the period covered by this report. While, however, our operations have in general had a fair and now increasing growth, we have unfortunately been obliged to provide for a considerable loss resulting from business undertaken by one of our branches during 1903. Besides this provision, and following the policy already adopted in respect to the "organization account," your Directors have caused to be charged off in addition to the usual 10% for depreciation of furniture and fixtures, the whole of the cost of acquisition of the Manila, Hongkong, and Shanghai branches and good will in the Orient of the Guaranty Trust Company of New York, of which you were advised in February last. The business thus acquired is of undoubted value to your Corporation, but as nothing was included in the purchase in the way of tangible banking assets it has been decided not to defer writing off any part of the consideration given therefor.

The net profits of the half year, before making the provisions just mentioned, were 12% less than those of the preceding period. The Corporation is still under an expense for management and staff at each of its branches which, while necessary to the conduct of business, bears a greater proportion to the gross earnings than will be the case when the current transactions reach the volume we expect soon to attain.

Since the close of the period reported upon a revival of trade between the United States and China has resulted in much desirable business and will be reflected in our statement at the end of the year.

The National Shoe and Leather Bank and The International Bank have continued to make satisfactory progress in spite of the unusually low money rates in New York during this year.

Owing to labor troubles and other unavoidable delays the building at 60 Wall Street will not be completed as soon as first expected but will be ready for occupancy early in 1905.

The management requests your cordial cooperation in furthering the Corporation's interests, and will give prompt attention and the best service to all business.

Very respectfully,
W. L. MOYER, President.

FOURTH SEMI-ANNUAL STATEMENT OF
INTERNATIONAL BANKING CORPORATION.

At Close of Business June 30, 1904.

Assets.

Demand Loans aud Advances		4 321 684 16
Time Loans		738 269 43
Bonds and Stocks		4 210 768 77
Commercial Credits		2 615 296 69
Bills Discounted		5 143 413 69
Bullion and Remittances in transit		3 948 927 47
Furniture and Fixtures (Head Office and twelve Branches less 10% depreciation semi-annually.)		83 274 75
Due from Banks and Correspondents		696 309 63
Cash on hand and in Local Depositories		5 405 065 63
		27 163 010 22

Liabilities.

Capital		3 947 200 00
Surplus		3 947 200 00
Profit and Loss		2 991 30
Acceptances, Drafts on Branches and Correspondents, and against Bills Receivable or bullion in transit		4 409 535 80
Due Banks and Bankers	3 293 056 41	
Deposits, Demand	8 205 799 63	
Deposits, Time	3 357 227 08	14 856 083 12
		27 163 010 22

NIPPON RAILWAY COMPANY

The Nippon Railway Company, which has been considering the opening of a steamship service between Aomori and Hakodate, has provisionally decided to construct three steamers of about 600 tons each, with a speed of 18 knots. The steamers will reduce the time between Aomori and Hakodate to four hours or less, about one-half the time now required in crossing the straits. The cost of the steamers is estimated at -Y-450,000, and the additional expenditure for establishing the new service -Y-150,000. The Nippon Railway Company first approached the Nippon Yusen Kaisha and the Tokyo Bay Steamship Company, which are now running steamers between the two northern ports, asking if they would open a service connecting the two railways. There is the possibility of an agreement being made with the Tokyo Bay Company, but failing this the Nippon Railway will carry out its own plans as explained above.

PHILIPPINE CURRENCY REPORT FOR NOVEMBER

The following is Vice-Governor Ide's report on the currency for November:

EXCHANGE SOLD

Exchange upon the gold standard fund in New York was sold to the amount of $223,325, the smallest amount sold during any month since the pasage of the gold standard act. At present it is not profitable to transmit money from the Philippine islands to the United States by exchange from the gold standard fund.

CURRENCY EXCHANGE

$1,181,682.20, United States money, was exchanged for P2,363,464, and P2,411,850.76 was exchanged for $1,205,925.38, United States money, all at par.

OLD LOCAL CURRENCY EXCHANGE

143,619.23 pesos of old local currency were purchased by the insular treasury at the rate established by law.

CURRENCY SHIPMENTS

Mexican currency to the amount of 1,022,750 pesos was exported by banks and business houses and 250,000 pesos, Spanish-Philippine currency, were exported by the government for recoinage at San Francisco, making 1,272,750 pesos of the old local currency eliminated from circulation and from the islands, none of which can lawfully return.

SILVER CERTIFICATES

Additional silver certificates to the amount of P200,000, were issued during the month, making the total amount in circulation on November 30, P7,430,000, of which P5,200,000 were in ten peso denomination, indicating that the larger denominations are much more in demand than the smaller ones, and further indicating that denominations larger than ten pesos would be greatly in demand if authorized by law. The Commission has recommended that Congress authorize the issuance of silver certificates of twenty, fifty, hundred, five hundred, and one thousand peso denominations.

CIRCULATION OF NEW CURRENCY

Total Philippine currency received in the islands down to November 30, P25,000,520; total actual circulation on that date, P18,003,984.72. The increase of the amount in actual circulation during the month amounted to P2,940,941. This is the largest increase that has been made in any month since the new currency was introduced. The Banco Español Filipino has in circulation notes payable in Philippine currency amounting to P1,318,219 pesos. For the purpose of determining the amount of the new currency that is in circulation, the Spanish-Filipino Bank notes may be properly added to the sum above stated. This would make the total amount of new currency in actual business circulation P19,322,203. The treasury also has 366,619,23 pesos old local currency awaiting shipment to San Francisco for recoinage. Of the Spanish-Filipino coins already shipped to San Francisco for recoinage approximately 3,410,000 are en route to San Francisco, or in San Francisco, or en route from San Francisco to Manila.

The demand for the new currency is well shown by the small amount of current credit balances, aside from Government deposits, in the Manila banks on August 31, September 30, October 31, and November 30, which were respectively as follows:

On August 31, Pfs. 1,814,474; on September 30, Pfs. 413,195; on October 31, Pfs. 52,441; on November 30, Pfs. 38,423,37. In other words the call upon the Manila banks for the new currency has been such that on November 30 they had current account credit balances, aside from government deposits, of only about 2 per cent of like balances on August 31.

CURRENCY NOTICES

During the month 60,000 circulars in the English, Spanish, Bicol, Chinese, Ilocano, Pampanga, Pangasinan, Tagalog, and Visayan languages were distributed throughout the islands by being posted in conspicuous places and heralded by "bandillo" in the various municipalities. The notices contained full information for the inhabitants as to the necessity of disposing of their old currency before January 1, 1905, and the method of doing so without loss, through government agencies.

EXCESS OF UNITED STATES CURRENCY ON HAND

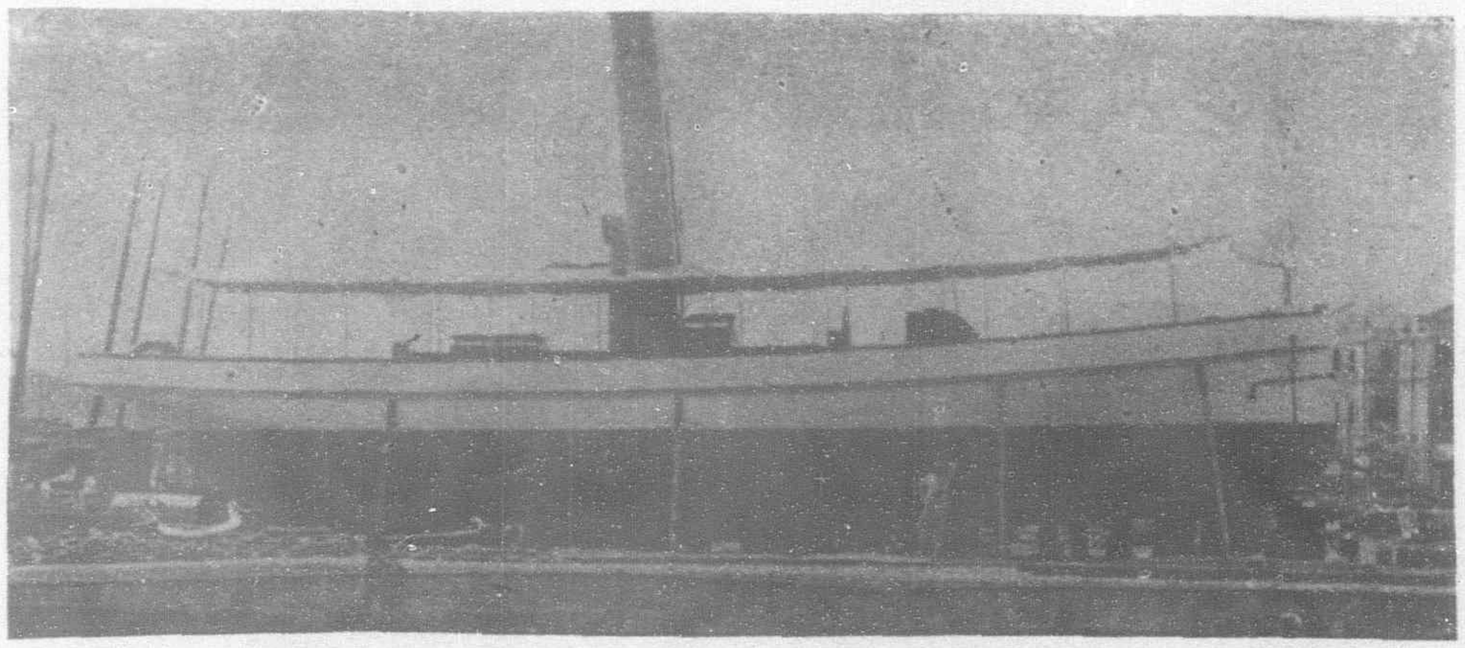
The demand for the new currency has been so great that very large amounts of United States currency have been received at the treasury and exchanged for the new currency; an excessive amount of United States currency is in the treasury and can now be freely exchanged for Philippine currency at par to all who may wish it, for export or for any other purpose.

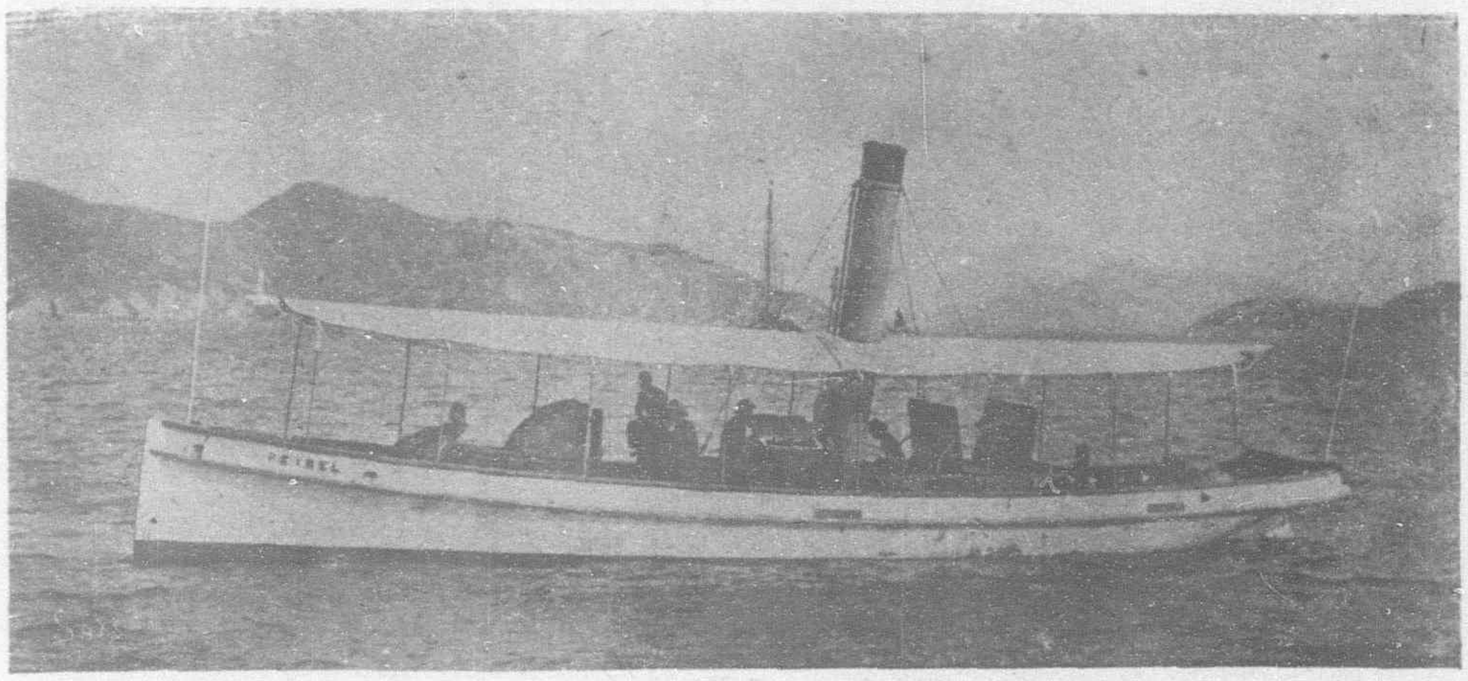
AYALA BRIDGE—OPENING OF BIDS

On December 1st, the bids for the construction of the new Ayala Bridge over the Pasig River were opened at the session of the Municipal Board. There were 13 bidders, submitting designs from England, Germany, France, Belgium, and the United States. Only five bids were received for the complete erection of the structure, the bids varying from $64.863.00 to $185,000. For the delivery of the material eight bids were offered, ranging from $42,095.00 to $120.500.00.

The names of the bidders were as follows: Clinton Bridge & Iron Co, of Clinton, Ia.; Milliken Bros., of New York; Penn Bridge Co., of Beaver Falls.; King Bridge Co., two plans; and Strong & Trowbridge Co., of New York. This last bid was rejected as irregular. The local firms submitting bids were: Atlantic, Gulf, & Pacific Co.; J. G. White & Co.; Henry W. Peabody & Co., and Castle Bros.-Wolf & Sons (4 designs), representing American builders; Fred Wilson & Co., English designs; Finlay & Co.; Holliday, Wise & Co. (3 designs); Germann & Co. (3 designs); and Froelich & Kuttner (3 designs).

Owing to difference in design and technical detail, evidenced from the wide range of bids submitted, it will take some time for the board, of which Major Case, the City Engineer, is the head, to make their decision.





STEAM LAUNCHES "HAWK" AND "PETREL" BUILT BY W. S. BAILEY & CO. OF HONGKONG.

NEW STEAM LAUNCHES FOR THE PHILIPPINES

The latest acquisition to the already large fleet of harbor launches suitable for inter-island traffic are the "Petrel" and "Hawk," built at the shops of Messrs. W. S. Bailey & Co., of Hongkong, to the order of J. G. White & Co., the engineers and contractors who are constructing the Manila electric street railways. In addition to this big undertaking they have also secured the contract for the improvements of the ports of Iloilo and Cebu, and it is in connection with this work that the launches will be employed.

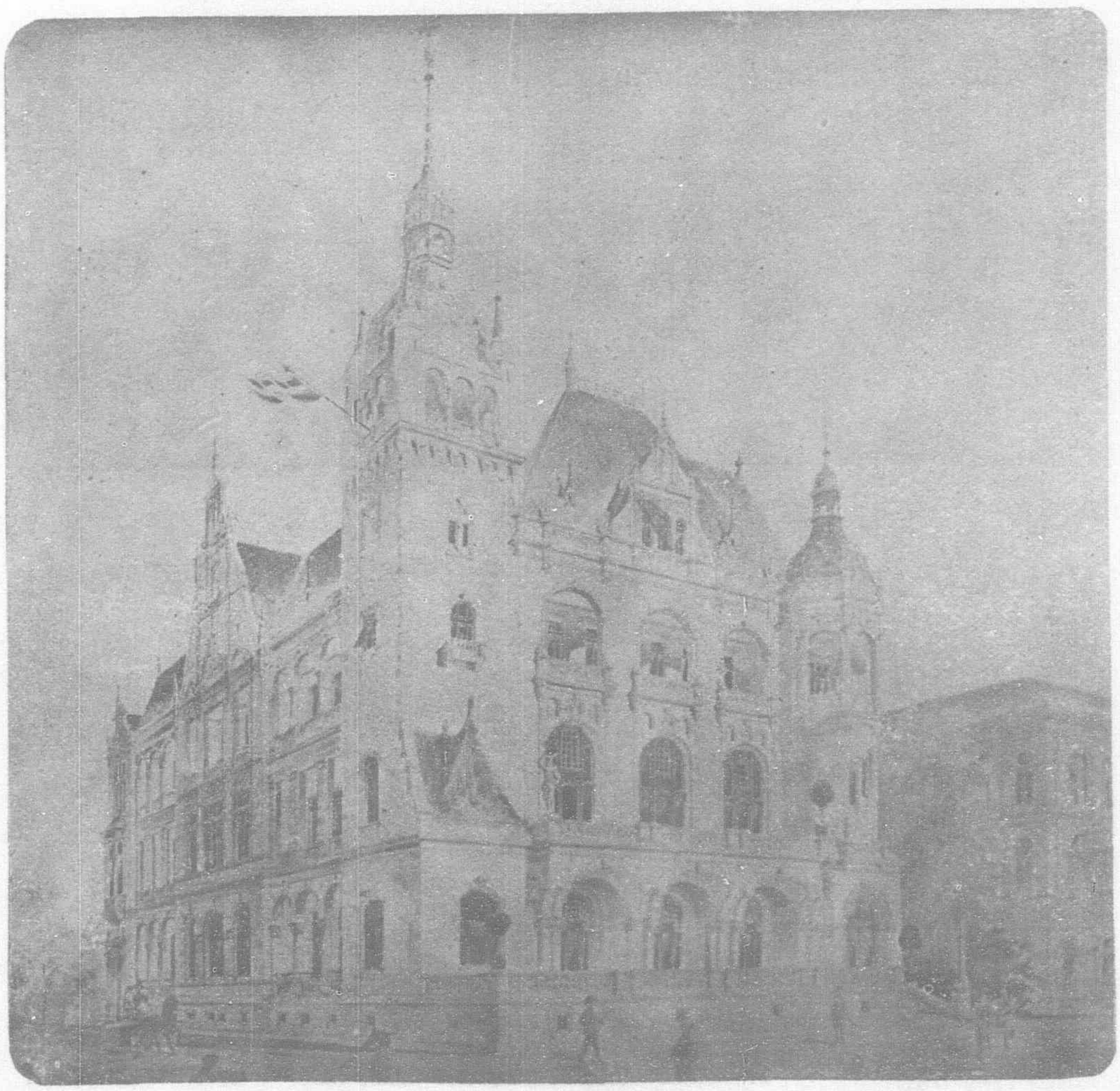
The launches are finely built little boats, and reflect credit on the builders. The "Hawk," the largest of the two, measures 79 feet over all; moulded beam, 14 feet 6 in., and 7 ft. 6 in. moulded depth. She is fitted with compound surface condensing engines, 10 in. x 20 in x 14 in. stroke. The boiler is of steel, 7 ft. 6. in. diameter and 8 ft. in length; working pressure, 125 lbs. The "Petrel" measures 55 ft. in length, 10 ft. 9 in. moulded beam, and 5 ft. 10 in. moulded depth, and is also fitted with compound surface condensing engines, 7½ in. x 15 in. x 11 in. stroke. The boiler is of steel, 5 ft. 9 in. in diameter by 7 ft. 1½ in. in length. Working pressure, 125 lbs. The hulls of both launches are of teak wood. These little boats arrived on Sunday, the 11th inst., at Manila, having made the trip from Hongkong under their own steam. They left the latter port on the 5th, but were compelled to put back three times owing to the heavy sea from the northeast monsoon. Chinese crews brought the boats over.

The Mergui Coal Syndicate (Ltd.) has been registered with a capital of £1,000 in £1 shares, to acquire grants, concessions, farms, pearl fisheries, etc., in Burmah or other parts of India or elsewhere, and to carry on the business of coal and general miners, and prospectors.

THE SHANSI-SHENSI RAILWAY.—Some time ago a French merchant, through his Chinese representative, a native of Shansi, petitioned the Wai Wu Pu (Board of Foreign Affairs) and the Shang Pu (Board of Commerce) for the right of undertaking to build the railway between Shansi and Shensi, extending from Hsiangan, capital of Shansi, to Taiyuentu, capital of Shensi, for a total length of over two thousand *li*. Some ten proposed regulations were also submitted, and the management was to be in conformity with the new regulations of the Board of Commerce. In this connection instructions for making investigation into the condition and circumstances in those provinces, particularly their interests, were then sent to the provincial authorities responsible, and to make an early report of same. In consequence the Governor of Shansi and the Governor of Shensi lately had a conference together for a final discussion of the subject at issue, after which a joint report was sent, to the effect that by virtue of the great length of the railway it invariably affects the commercial interests of the several provinces in the south-west of China. Hence the right of building the railway should not be given to any outsider, but to the gentry and merchants of the two provinces. It is worthy of note that the latter have filed a petition stating that they are willing to take up the whole matter themselves with a view to protect the interests from falling into the hands of any outsider, and, further, that they will raise capital among themselves to carry out the object. On account of the report the Wai Wu Pu and the Shang Pu have accordingly disapproved the petition of the French merchant in question.

SZECHUEN-HANKOW RAILWAY.—An Austrian merchant has come to Peking and laid a request before the Wai Wu Pu that he, with the co-operation of the Viceroy of Szechuen, might be allowed to build the Szechuen-Hankow Railway with a certain capital. His request, however, was rejected.

BRITISH RAILWAYS IN CHINA.—The necessity of doing something with our concessions may be illustrated, said the *Times* recently, by the case of the Hangchow line. This is to be an extension of the Shanghai-Nanking line. The latter is described as the most valuable concession of its kind in China, while its control in British hands is indispensable to the protection of our interests at Shanghai and in the Yangtsze valley. We have had the preliminary contract since 1898, but the work has not yet been begun, and it is only after a strong remonstrance from our Minister that the obstructive attitude of Sheng Ta-jen has been at last overcome and authority given for the issue of the bonds. But, though Sheng has done his best to retard the construction of the Nanking line, China has alleged this delay as a reason for refusing to discuss the final agreement for the Hangchow extension. The gentry of Chekiang have displayed an unexpected interest in the railway question. They have witnessed with concern the prospect of a British "monopoly" of concessions in that region, and they thought out—or adopted—an ingenious proposal to defeat it. In order to "balance the power" which we might ultimately acquire, they proposed to build a second line from Shanghai to Hangchow. They offered to subscribe half the capital themselves, and they made an agreement with a German firm to provide the other half. They do not seem to have placed implicit reliance in their German associates. They applied for and obtained a guarantee for the 2,000,000 taels which were to be provided by the German firm from Dr. Knappe, the German Consul-General at Shanghai. The project, we understand, has fallen through. Its history survives as an instructive warning of the dangers of delay in carrying out our concessions, and as a practical reminder that, while Germany claims for herself a special position in Shantung, she also adheres to the contention—which Lord Salisbury repudiated in 1898—that the Yangtsze region is still "unreservedly open" to her enterprise.



NEW CONCORDIA CLUB HOUSE, SHANGHAI.

CLUB CONCORDIA, SHANGHAI

In the presence of Prince Adelbert of Prussia, son of His Imperial Majesty, Emperor William, Admiral Prittwitz von Gaffron, Consul General Dr. Knappe, and the entire German colony of Shanghai, the ceremony of laying the corner stone of the magnificent new Concordia club house was celebrated in that city on the 22nd of October.

The site of the building is one of the best in the city, situated as it is at the corner of the Bund and Tin Kee Road. This fine position permits of a clear and unobstructed view of the most interesting thoroughfare in the Far East, the famous Bund, the busy river, and nearby Public Gardens, and will prove a great attraction and incentive for the enrollment of new members.

The handsome design in the style of the German Renaissance, with the graceful corner tower, makes the building a conspicuous landmark and a decided addition to the architectural beauty of the city. The Directors of the Club advertised early in the year, offering a prize for the best design of the proposed new clubhouse and made the competition open to all architects irrespective of nationality. The prize was awarded to Mr. H. Becker, of Shanghai, against several other well-known architects of the East and Germany, his work being far superior to other designs submitted. The Committee also awarded Mr. Becker the contract for the further elaboration of the detailed plans, and the erection of the structure.

The entire basement on the Bund side will be given over to a large bar and refreshment room, opening on to a fine spacious verandah. Adjoining will be the spacious billiard and reading rooms, and a fine modern sanitary toilet room.

Above, on the first floor facing the Bund, will be located the elegant dining hall, capable of seating 200, which will also open out on a balcony overlooking the Bund. A row of society, meeting, and reception rooms are also on this floor, as well as the large and well-stocked library, at present containing some 15,000 volumes.

The top floor will be divided into eleven handsomely decorated and finished bed rooms with separate baths for the use of members and guests. A special entrance and stairway, leading to this floor, leads from the Tin Kee Road side. These rooms are large and airy, and will be fitted with all modern appliances for comfort. They open on a wide verandah.

The main front facing the Bund measures 98 feet, and the Tin Kee Road side is 166 feet in length. The ground was purchased for 225,000 Shanghai taels, and the sum of 180,000 taels have been set aside for the erection of the edifice.

The work is progressing favorably, and it is hoped that it will be fully completed and dedicated in the course of two years.

GEO. H. TAY COMPANY

This concern has secured one of the most valuable business locations in Manila for the display of their large stock of modern sanitary appliances. The ground floor of the McCullough building, with the adjoining warehouse, fronting the Santa Cruz bridge, has been completely remodelled and refurnished to exhibit their goods to the best possible advantage. A suitable arrangement for showing the different styles of modern flush closets in operation is being installed and the show room will be quite on a par with similar establishments in the States.

A complete line of plumbing supplies will be carried in stock, in addition to sewer and soil pipes, brass and other goods allied with the trade. The company proposes to conduct a general contracting business, not only in the plumbing line, but also for the more important branches of sewer and water systems. Their main office is located at San Francisco, with branches at Seattle and Los Angeles, and agents in several of the Far Eastern commercial centers. Mr. Charles W. McDonald is the Manila manager, and he is to be congratulated on his selection of such a favorable business location.

THE SEOUL-FUSAN RAILWAY.—The construction of the longest tunnel on the Seoul-Fusan Railway, that at Senken, which is the most difficult piece of work on the whole line, is now nearly completed, and the tunnel is being bricked. Other smaller tunnels will be completed before long, and it is expected the whole line will be opened for traffic early in December.

FUKIEN RAILWAYS.—Wong Sung Tson, one of the gentry of Fukien, has petitioned the Government that he in co-operation with French capitalists may be allowed to have the whole concession for railway building in Fukien province. He is now endeavoring to persuade the high officials here to support his application.

(Courtesy Hongkong Telegraph.)

HON. W. CHATHAM, M. I. C. E.,

Director of Public Works, Hongkong.

THE NEW LAW COURTS HONGKONG

DESCRIPTION OF THE BUILDING

Since the laying of the foundation stone of the new Law Courts by Sir Henry Blake on the 12th November last, there has been renewed activity on the vacant land lying between the Queen's Statue and the City Hall, and the outline of the buildings can now be readily traced by means of the brick walls which are daily increasing in height. The building, consisting of the new Law Courts, Land Offices, etc., will, when completed, form a very valuable addition to the architecture of the city, and one of the finest erections in the Colony, the beauty and skill portrayed in the design being far in advance of anything to which we have been accustomed. The style that has been adopted is, as might be expected, purely classic in feeling, following the English school and with details of a Greek character. The site lies between Des Vœux Road and Chater Road, and is adjacent to the Cricket Ground on the west side. The designs of the buildings were prepared by Messrs. Aston Webb, R. A., and E. Ingress Bell. F. R. I. B. A., of 19, Queen Anne's Gate, London, the consulting architects to the Government of Great Britain, and the work is being carried out under the supervision of Mr. H. Y. Fisher, A. R. I. B. A., of the Public Works Department, Hongkong.

The ground floor of the structure will be occupied by various offices for the officials of the Courts, including spacious apartments set aside as Land Offices, and separate rooms for the Registrar, the Deputy Registrar and their respective clerks, and also for the Bailiffs. On this floor also is a Prisoners' Receiving Room with a separate entrance, and cells in connection, while special staircases leading to the docks of the large and small Courts on the floor above will be provided. There are two large entrances for the general public, both on the west side of the building, and these communicate with the several offices by means of spacious corridors. Access for the public to the first floor is provided by two wide staircases, and on the east side is an entrance for the Registrar and other officials, and a separate doorway for the use of the Judges.

A lift, which will be worked by electrical power, will be used in addition to a private staircase, for the convenience of the Judges and other officials who may be engaged on the upper floors. The official portions of the building throughout are carefully kept distinct from those to which the general public have access.

On the ground floor ample accommodation is also provided for the safe custody of official records.

There is a small basement in which are situated the furnaces, boilers, etc., for the heating of the building, which will be on a hot water system at low pressure, with radiators in all rooms and corridors. The system is arranged in four separate sections in order that only such portions of the building as are necessary need be warmed at any one time.

The large Court is placed in the centre of the first floor and is surrounded by the smaller rooms and corridors, so that no sound from outside the building may penetrate while the Court is sitting. This is a large and lofty apartment lighted by means of four large semicircular windows placed high up, each being twenty-eight feet in diameter, and four small circular windows. Ample space is provided for members of the legal professions, for the jury, witnesses, reporters, etc., as well as the usual accommodation for the Judge and prisoners, and a considerable area is also reserved for the use of the public.

There will be four pairs of massive granite columns ranged along the walls supporting the large dome above, and these will add much to the handsome and imposing appearance of the Court. The height of this chamber, from the floor to the ceiling of the dome, will be forty-eight feet.

There is a smaller and commodious Court on this floor on the north side of the large Court, from which it is separated by a wide corridor, and is well lighted by casement windows opening on to the colonnade. This is for the use of the Puisne Judge.

The south end of the same floor is occupied by a spacious Library for the use of the Judges and officials, which is also in communication with the colonnade. The Library is surrounded by a wide overhanging gallery.

On the same level is a large number of rooms grouped around the Central Court, and set apart for the use of counsel and solicitors, while waiting rooms for witnesses and consultation rooms for the convenience of litigants are also provided in addition to separate retiring rooms for each of the Judges, besides the Jury room, and efficient lavatory accommodation is provided throughout.

The second floor, reserved for officials of the Court, is gained by a continuation of the officials' staircase from the ground floor, and by the lift. Here are situated large offices for the accommodation of the Attorney General, the Crown Solicitor, and their respective staff of clerks, and a considerable space is set apart for the storage of books, etc.

The internal walls are to be built of red bricks, while the main piers supporting the dome and some other portions will be of granite. The external walls are to be faced in finely punched white granite, all of which is being carefully selected for the purpose. The whole building will be of fireproof construction, and has been designed with a view to efficiently withstanding the ravages of white ants. The floors throughout are formed in concrete and steel, all the metal being well protected by casings of concrete and asbestos plaster. The Small Court and Library will be covered with red tile roofs; the smaller rooms and corridors with concrete flats, and over the centre of the building a large dome of some forty feet span is cleverly placed on four massive granite piers. These are connected by heavy arches of brickwork in cement from which springs the inner dome, forming the ceiling of the large Court. Above this again rises the drum of the external dome, consisting of granite faced walls supported on steel framing and surrounded by detached columns. From the base of the drum eight steel trusses spring, supporting the stone lantern at the top, and which are united on their outer surface with steel framing filled in with concrete, and covered externally with cast granolithic slabs, forming the outer surface of the dome.

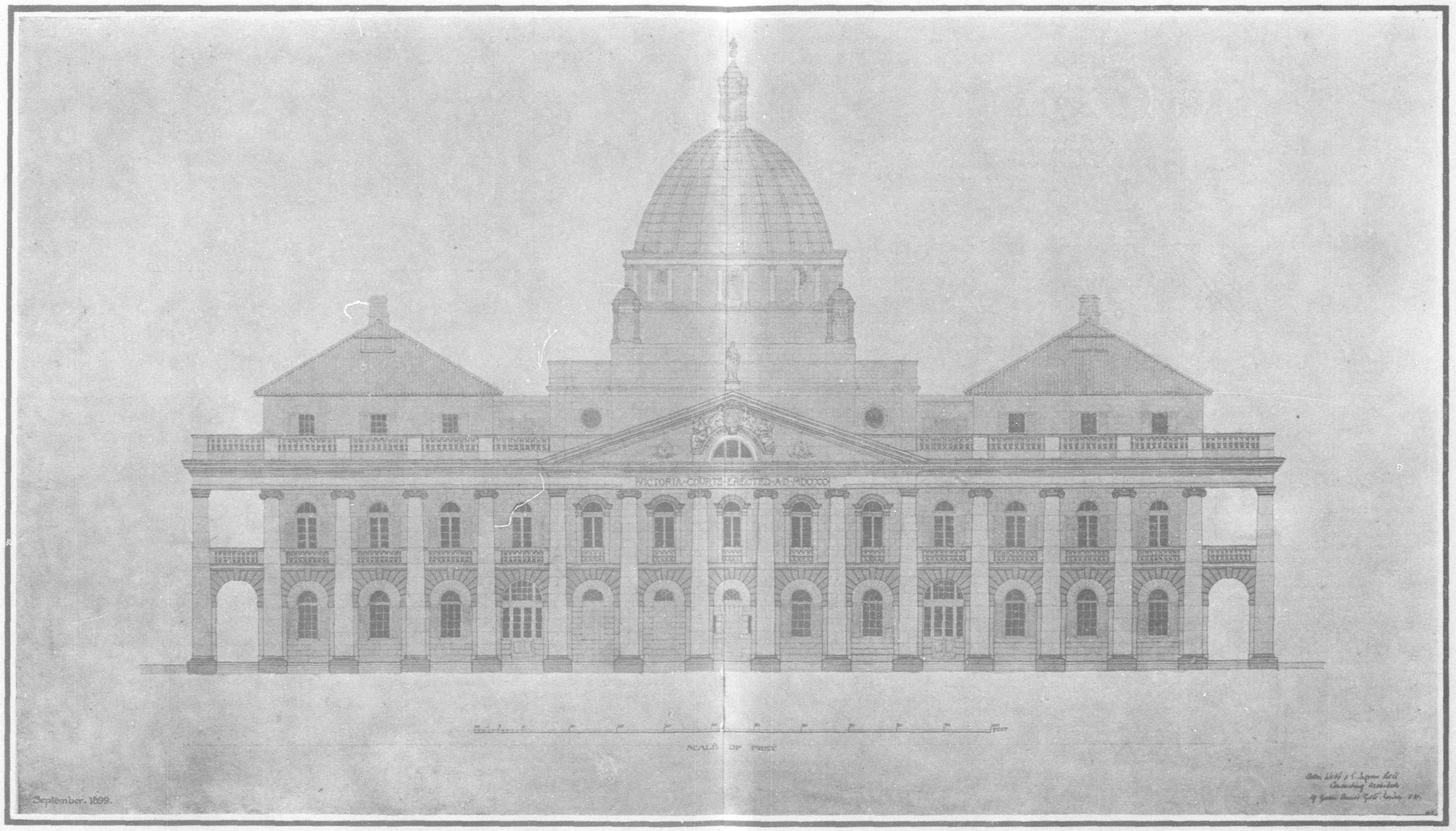
Internally, the walls of the various rooms will be finished in plaster, and there will be glazed tile dados to all lavatories and corridors. The ceilings will be ornamented in plaster, which will be formed with asbestos where necessary for protection from fire. The floors throughout, except to lavatories, will be finished with hardwood blocks laid in preservative composition, and the lavatories are to be paved with ornamental tiling. The staircases will all be constructed in granite, with ornamental wrought iron balusters and polished wood handrails. The joinery throughout is to be in teak, and has all been specially designed for the building.

The whole of the interior of the building will be amply lighted by means of electric glow lamps, and great attention has been given to the warming and ventilation of each of the several apartments.

(Continued on page 30)

THE NEW LAW COURTS

HONGKONG

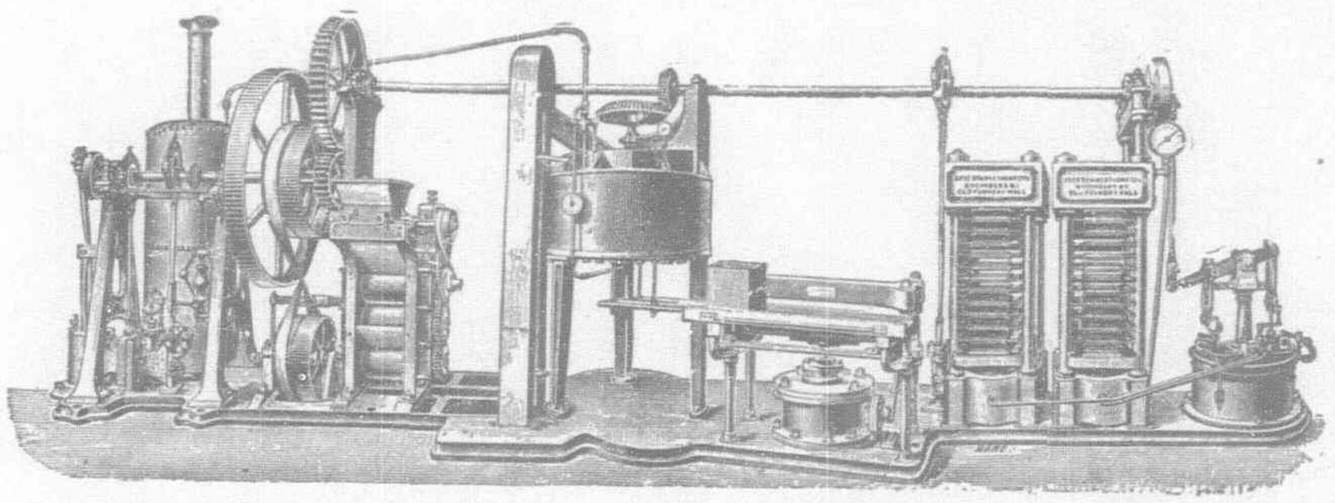


(Courtesy of Hongkong Telegraph.)

WEST ELEVATION.

PHILIPPINE COPRA PRODUCTION

The illustrations of oil mill machinery are from the catalogue of Rose, Downs & Thompson, Ltd., Hull, England.



"COLONIAL" MILL. A 30-HORSEPOWER COPRA AND OIL MILL WITH A CAPACITY OF 8 TO 9 CWTS. PER HOUR.

(Continued.)

"Present prices of copra products f. o. b. Marseilles, per 100 kilograms (220 pounds) are now quoted:

ARTICLE.	PRICE. Francs.	
Vegetaline	89.00	$17.18
Cocose	87.00	16.79
Cochin neutre	77.00	14.86
Cochin neige	74.00	14 28
Ceylon quality	71.50	13.80
Ordinary soap	70.00	13.15

"The above prices for oil in barrels, of Marseilles make, are for Septewber and October delivery.

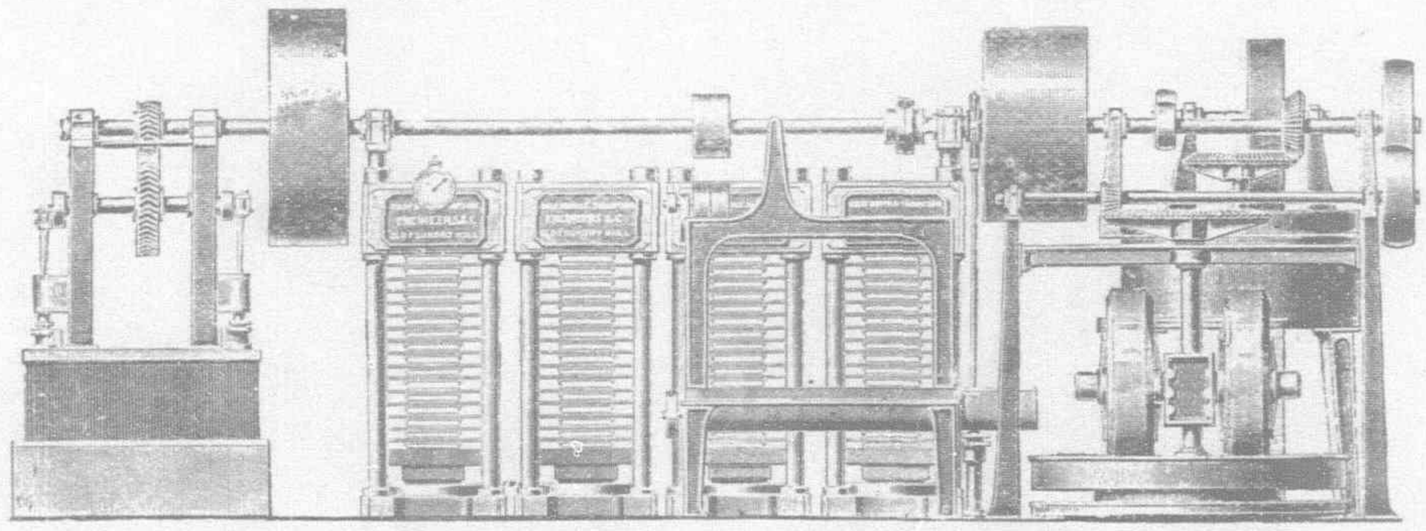
"The declared value of exports of copra oil from Marseilles to the United States has been as follows during recent years:

1902	$ 31,181
1901	84,238
1900	105,975
1899	41,000
1898	80,500 "

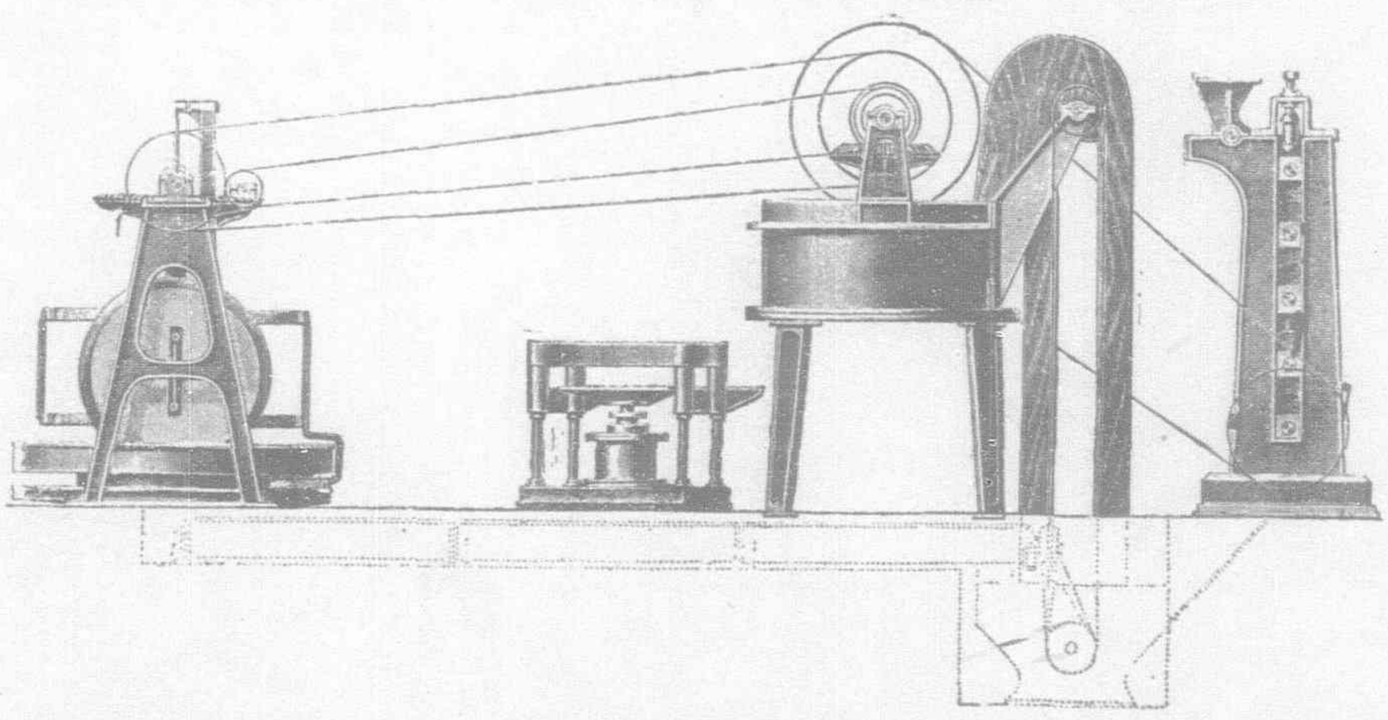
To meet the requirements of the trade, importations of copra into Marseilles from all sources are reported by the United States Consul to have increased from 164,266,950 pounds in 1895 to 240,458,026 pounds in 1903.

The significance of these discoveries in their relation to the cocoanut oil industry cannot be overestimated, for to none of the purely vegetable fats do the prejudices attach that have so long and seriously handicapped those derived from animal margarin or margarin in combination with stearic acid, while the low melting point of pure dairy butters prohibits to a certain degree their use in tropical countries. In a recent reference to the increase in the price of lard at certain consular stations in Europe, it is found that cocoanut oil in solid form is being substituted for the former to such an extent that lard and butter dealers at the different places have contended for a higher import duty on the artificial product, in order to counteract the effect of the importation of this rival of their animal products.

Through other reports received from various places in the tropics where climatic conditions favor the cultivation of the cocoanut palm, it would seem that the difficulty in securing enough nuts to supply the increasing demand is not due to lack of natural resources, but rather to the limited development of the sources from which they might be obtained. The field is practically without competition and the question is not that of finding a market for the products but of procuring the millions of tons of copra required for manufacturing a quantity of oil sufficient to meet the demand.



THE "UNIT" ANGLO-AMERICAN MILL, WITH SELF SUPPORTING GEARING, FOR COPRA AND OTHER PRODUCTS. ELEVATION, SHOWING PUMPS, PRESSES, PARING MACHINE, PARING STONES AND KETTLE.



"UNIT" MILL, END VIEW, SHOWING PARING STONES, MOULDING MACHINES, KETTLE, ELEVATOR AND ROLLS.

The unusual demand for copra has resulted in a heavy increase in exports of this commodity from the Philippine Islands in the last few years, notwithstanding the fact that the native consumption may be estimated at nearly twice the quantity shipped to foreign markets. The outward movement for the calendar year 1903 was next in value to that of hemp, and, as French manufacturers have taken the lead in the development of the possibilities of the cocoanut oil industry, so has France taken the bulk of the copra produced in the archipelago. According to the trade returns of that country the earliest importation of Philippine cocoanut kernels or copra occurred in 1887, and amounted to 197,975 pounds, having a value of $5,199. From that time until 1891 there was a gradual increase in the shipments, and in the latter year receipts of copra from the Philippines at French ports reached 10,098,511 pounds, worth $318,261; thereafter a remarkable development was shown until in 1896 appears a record of 60,465,180 pounds, valued at $1,693,865. The receipts of subsequent years, it might be added, have exceeded those of 1896 with but one or two exceptions, until in 1903 copra in the amount of 133,457,007 pounds valued at $2,825,218, was sent to France, or practically the entire output of the archipelago, the gross value of shipments in 1903 amounting to $3,819,793.

During the twelve months ending December 31, 1903, United States imports of copra unprepared and cocoanuts in the shell, both of which items are on the free list under the Dingley tariff, approximated one and a half million dollars in value, but very little coming from the Philippines. Although the market for this product is constantly enlarging in the United States, as well as in France, it is understood that merchants of the latter, on account of the subsidy received by shipping interests of that country, have the advantage of much lower freight rates than United States importers, and notwithstanding the refund of the export duty (ten cents per hundred kilos or two hundred and twenty pounds) that would, under the Act of March 8, 1902, be allowed on such shipments from the Philippines to this country, they are able to outbid the American merchant, take the copra to France, extract the oil, import it into the United States free of duty and offer it for sale at a lower figure than can be quoted by our manufacturers after receiving the copra by direct purchase from the Philippines.

As illustrative of the difficulties encountered in direct shipments between this country and the Far East, the following statement of the Consul-General at Apia, under date of February 4, 1899, is presented:

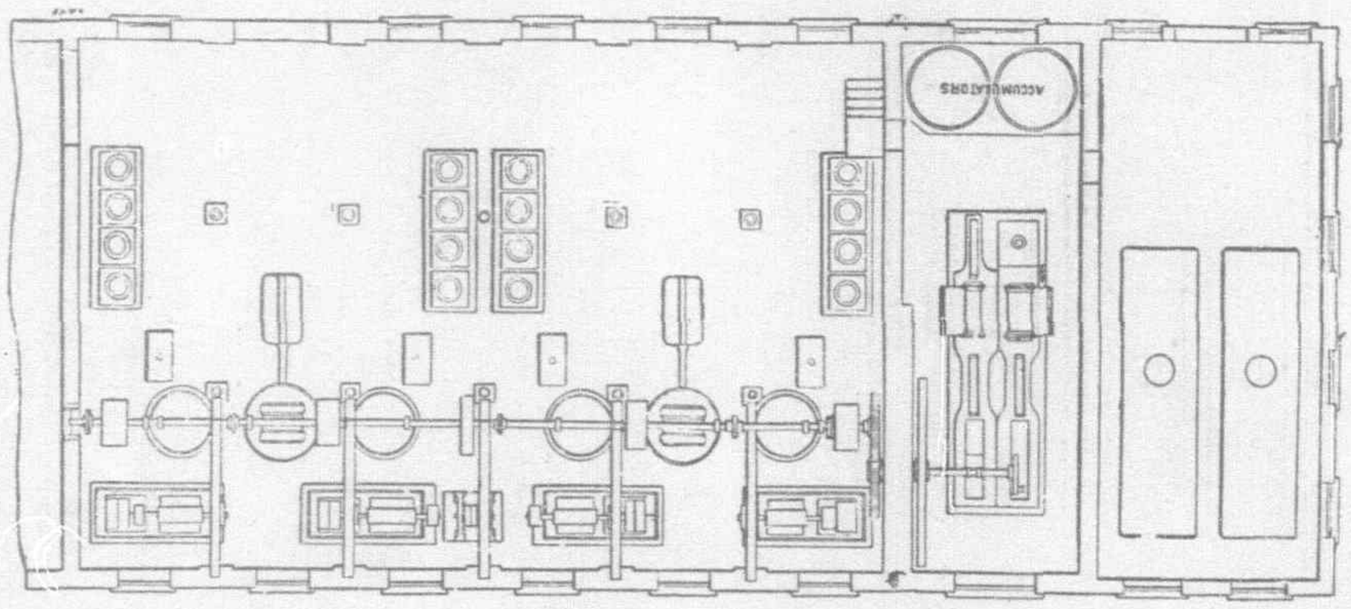
"During the last quarter of 1898 no invoices were issued at this consulate. Prior to that time invoices were issued each month, principally for copra, which was sent by a German

firm to San Francisco. The invoices for the first quarter of 1898 were $11,276; for the second quarter, $13,854.86; for the third quarter, $17,533.70, and for the fourth quarter, nothing. Upon inquiry I find that the contract of the German firm with the San Francisco merchant has terminated and that a fair price for the commodity cannot be secured in the United States. I am informed that only a trifle more than the cost of the copra at this place can be obtained at San Francisco. During the last year Lever Brothers, of Sydney, had an agent here, and competition was sharp. By the last steamer the agent was notified that he was no longer needed and that they had constituted the German firm their sole agents. This indicates that the entire product of the islands will from this time go to the colonies or to Europe. The loss of the sale in the United States means a corresponding loss of trade. Rates between San Francisco and Samoa have been such that most American commodities consumed here are sent to Sydney, and thence 2,800 miles to Apia, and delivered here much cheaper than they could be obtained direct from San Francisco. The tariff direct from San Francisco is $16 per marine ton, and from Vancouver to Sydney $6 per ton. Possibly some arrangement could be made by which goods could be sent to Vancouver and thence to Fiji, and then here by the interisland boats, which to some extent would relieve this place from the excessive rates from San Francisco."

While the extraction of the oil from the shredded cocoanut meat is an industry not yet fully developed in the United States, the requirements of the trade are for the most part being met by shipments of copra from French Oceania, Samoa, Guam, British and German Oceania. It is stated that there were imported into San Francisco from these sources in 1898, 7,964,656 pounds of copra; in 1899, 9,713,040 pounds; in 1900, 12,123,104 pounds; in 1901, 10,568,432 pounds and in 1902, 8,897,280 pounds. The total amount of copra reported as having left Philippine custom houses destined for the United States during 1902 was but 130,060 pounds, or less than one-tenth of one per cent of the total amount of copra shipped from the Philippines in that year. It would seem that in the absence of a remedy placing the United States importer of Philippine copra on an equal footing with purchasers of that article in other countries, the situation might well be taken advantage of by the investment of capital in developing one of the most promising industries in those islands, namely, the extraction of the oil, which is admitted free of duty in the United States, for exportation in place of crude copra.

In this connection the following appears in a communication from Consul R. P. Skinner, at Marseilles:

"The occupation of the Philippine Islands by the United States suggests the possibility of a transfer to the United States of an industry which is now almost exclusively confined to the city of Marseilles. The crushing of the oleaginous seeds and cocoanuts, for the extraction of the oil they contain, has for many years given employment to hundreds of workmen, and the skillful use of blended oils in the manufacture of soap gave this city its world-wide



ARRANGEMENT OF ANGLO AMERICAN "ACCUMULATOR" OIL MILL, SUITABLE FOR CRUSHING 60 TO 72 CWT. OF OIL SEEDS PER HOUR.

reputation for the latter. In more recent times, the American cottonseed oil has to a large extent replaced the copra or cocoanut oil, at the same time seriously crippling the seed-crushing business. A soap manufacturer advises me that the cottonseed cannot, however, entirely supplant the cocoanut oil, as the former, if used alone, produces a soap too soft to be acceptable to commerce; and the latter, if unmixed with cotton or peanut oil, makes a soap as much too hard. I am informed that a mixture of about half and half produces the best results, and that the failure of Marseilles manufacturers to maintain these proportions has been followed by a distinct falling off in the quality of some famous brands of Marseilles soap.

"The copra or cocoanuts crushed in Marseilles come almost exclusively from the Philippine Islands. In the year 1897, the imports amounted to 686,120 metric quintals (1 quintal equals 220.46 pounds), in addition to which 31,910 metric quintals were imported from the French colonies. The highest price paid at Marseilles during 1897 was $6.94 and the lowest $5.31. The nuts fall from the trees and lie on the ground until the hard shell separates from the kernel and decays. The kernel appears to lose none of its useful qualities, though permitted to remain on the ground for a year or more. When a favorable opportunity occurs, the copra is gathered, dumped into some small coasting boat, and eventually reaches Marseilles."

The exportation of copra is undoubtedly detrimental to the best interests of the planter, tending to benefit the foreign manufacturer to a greater extent than the grower, nevertheless there are conditions which temporarily favor the shipment of the crude material instead of oil from the Philippine Archipelago. These conditions, as well as the method of preparing copra and other products of the cocoanut palm and its cultivation, are set forth at length in the bulletin issued by the Philippine Bureau of Agriculture, in which the writer says:

(1) An oil-milling plant, constructed with due regard to economy of labor and the production of the best quality of oil, would involve an outlay of capital of $2,500 gold, and upward, according to capacity. The production of copra requires the labor of the planter's hands only.

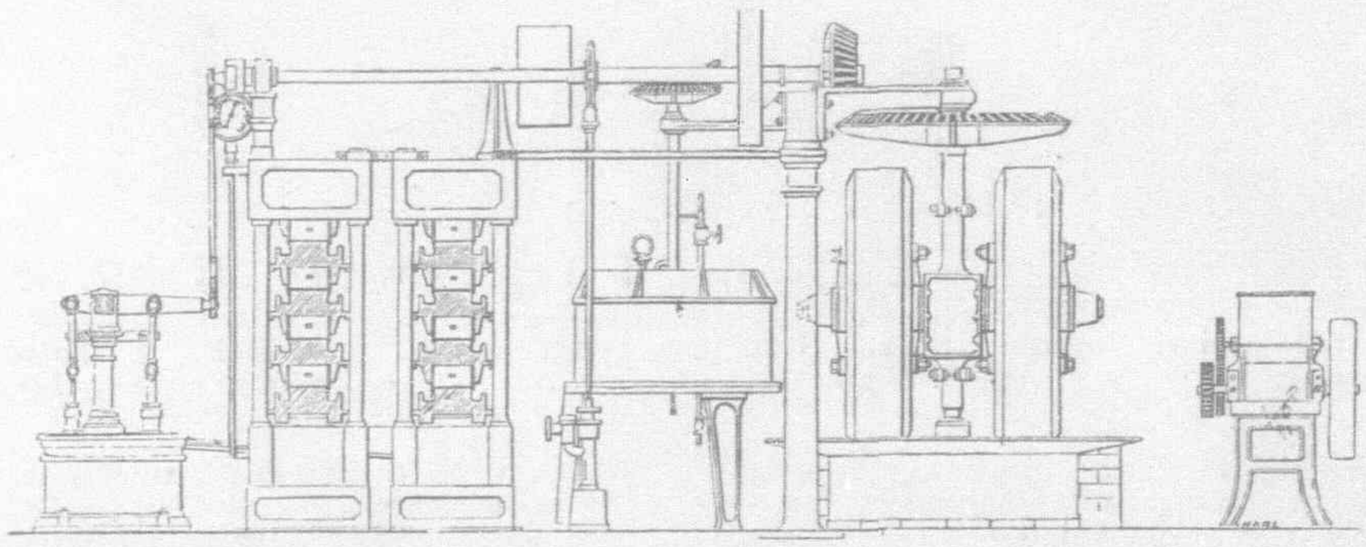
(2) The oil packages must be well-made barrels, casks, or metallic receptacles. The initial cost of the packages is consequently great, their return from distant ports impracticable, and their sale value in the market of delivery is not sufficient to offset the capital locked up in unproductive form. On the other hand copra may be sold or shipped in boxes bags, sacks, and bales, or it may even be stored in bulk in the ship's hold.

(3) When land transportation has to be considered, the lack of good roads still further impedes the oil maker. He cannot change the size and weight of his packages from day to day to meet the varying passibility of the trail. On the other hand packages of copra may be adjusted to meet all emergencies and the planter can thus take advantage of the market conditions which may be denied to the oil maker.

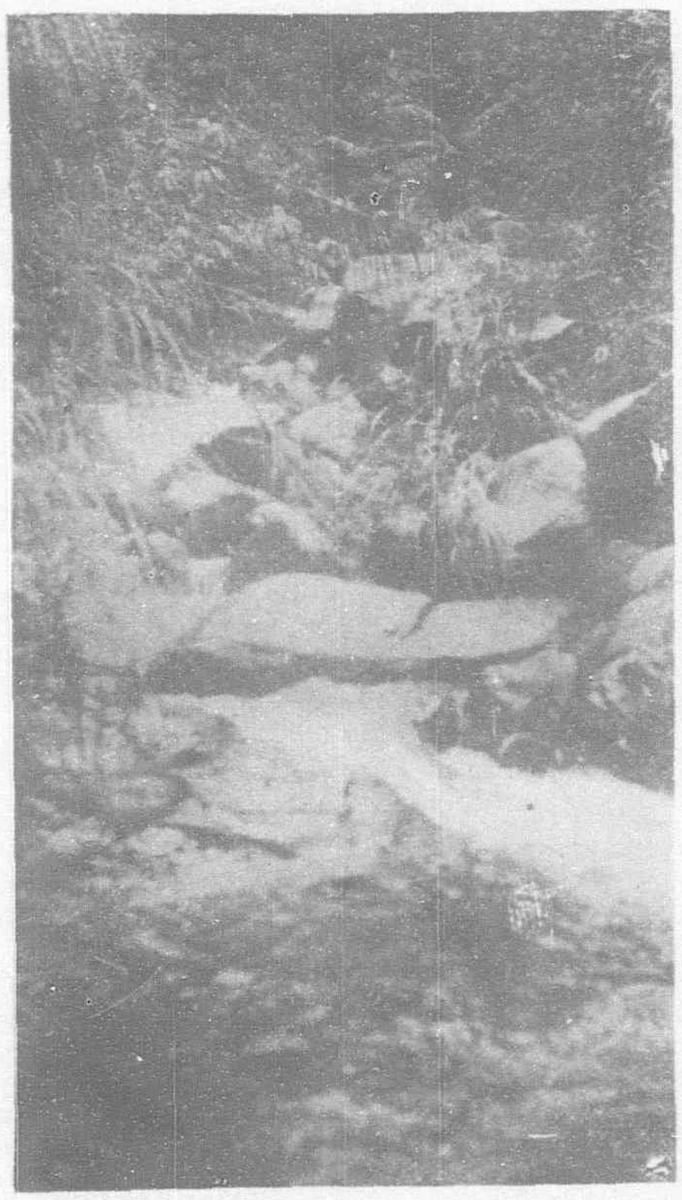
(4) Perhaps the most serious difficulty the oil maker has to contend with is the continuous discouragement he encounters from the agent of foreign factories who buys in the open market and, bidding up to nearly the full oil value of the copra, finds an ample manufacturer's profit paid by the press cake so valuable abroad but practically without sale or value here. The residue from the mill may be utilized both for food and for manure by the oil maker who is a tree owner and who maintains cattle. For either of these purposes its value rates closely up to cotton-seed cake, and the time is not remote when it will be recognized in the Philippines as far too valuable a product to be permitted to be removed from the farm excepting at a price which will permit of the purchase at a less figure of an equivalent in manure. So active are the copra-buying agents in controlling this important branch of the industry, that they refuse to buy the press cake at any price, with the result that in two instances known to the writer they have forced the closure of oil-milling plants and driven the oil maker back to his copra.

Many copra-making plants in India and Ceylon are now supplied with decorticating, breaking, and evaporating machinery. The process employed in this archipelago consists in first stripping the ripe fruit of the outer fibrous husk. This is effected by means of a stout, steel spearhead, whose shaft or shank is embedded firmly in the soil to such a depth that the spear point projects above the ground rather less than waist high. The operator then holds the nut in his hands and strikes it upon the spear point, gives it a downward, rotary twist, and thus with apparent ease quickly removes the husk. An average operator will husk 1,000 nuts per day, and records have been made of a clean-up of as many as 3,000 per day. The work, however, is exceedingly hard and involves great dexterity and wrist strength.

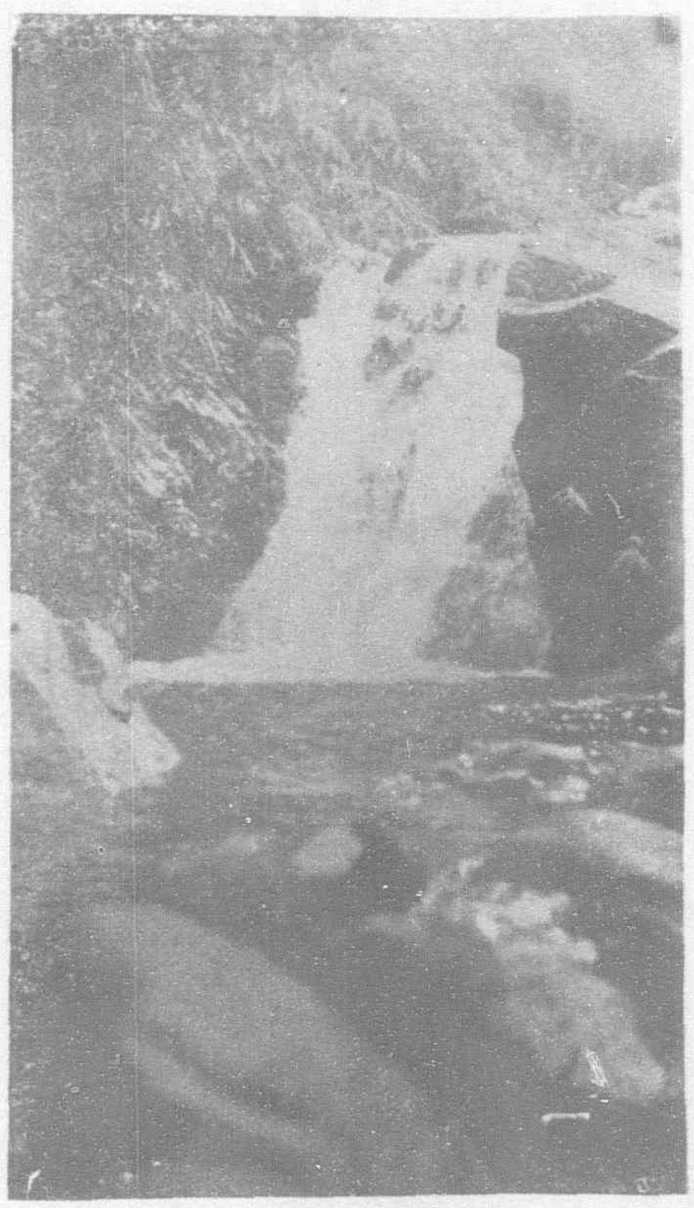
(To be continued.)



COMPLETE 20-HORSE POWER COPRA OR OIL MILL PLANT FOR CRUSHING 3 TO 4 CWT. PER HOUR, COMPRISING 2 HYDRAULIC PRESSES, 1 SET OF PUMPS, 1 SEED KETTLE, 1 SET OF ROLLS, 1 SET OF STONES, 1 OIL PUMP, ETC.

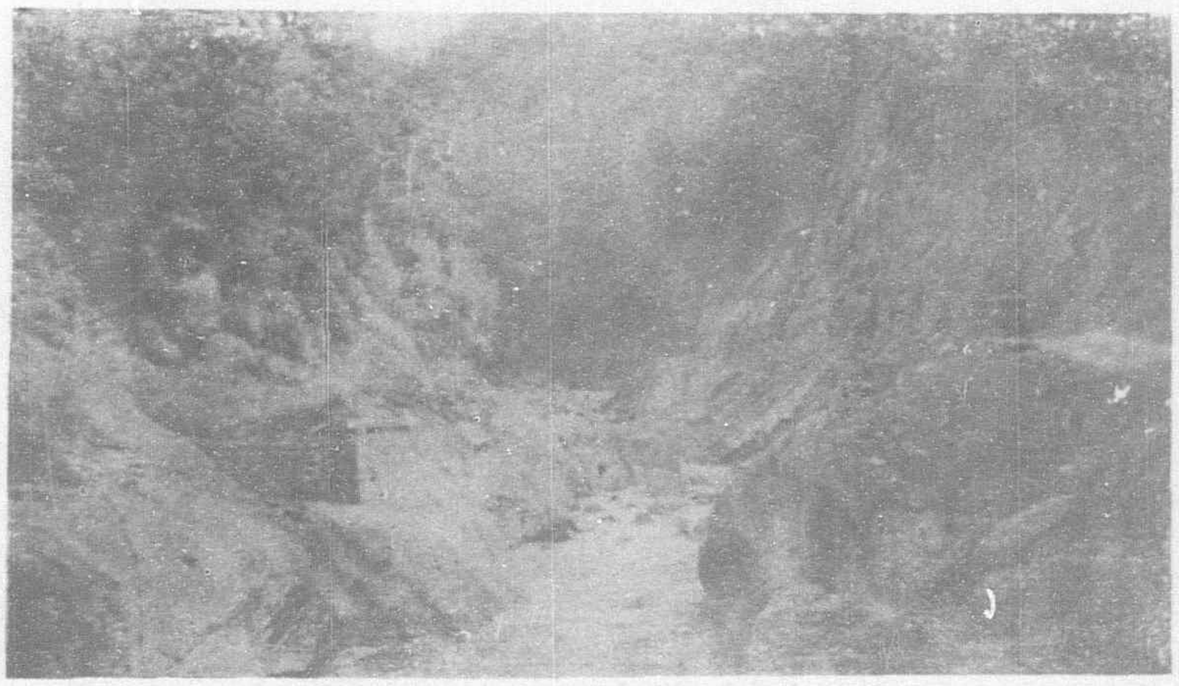


First small falls in river flowing through property.

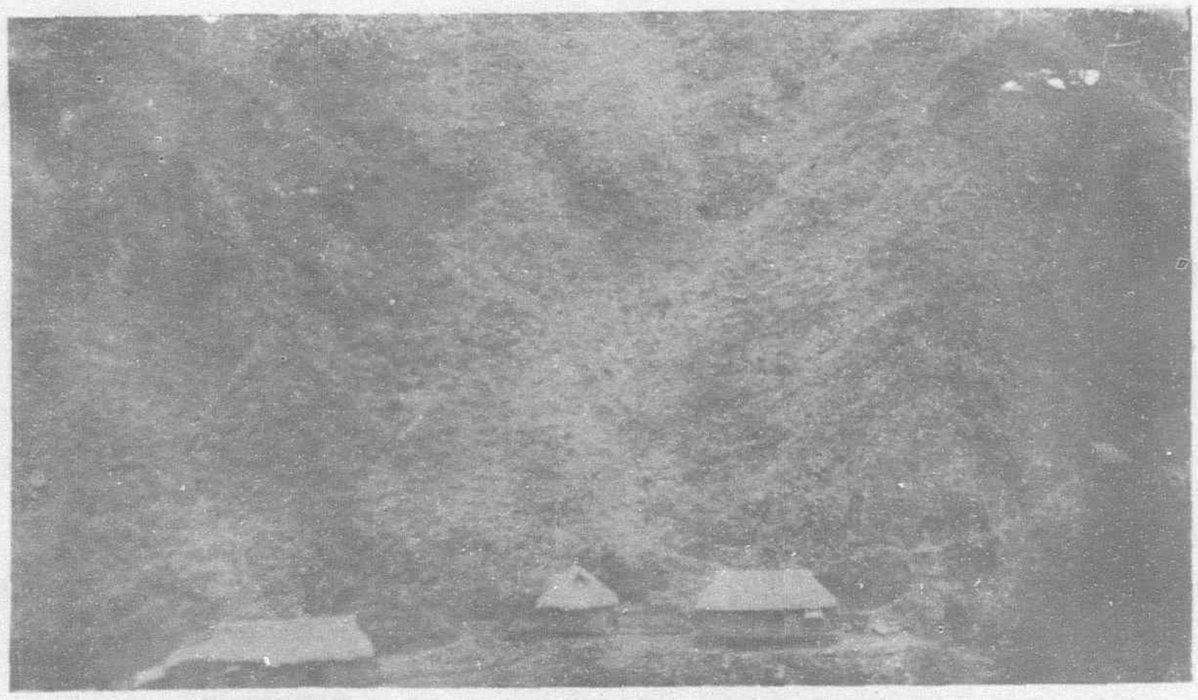


Falls No. 2 on property. Water the year round.

Falls No. 3. These double falls are over 80 ft. in height.



Section of Benguet Road. Promising outcroppings of gold in these hills.

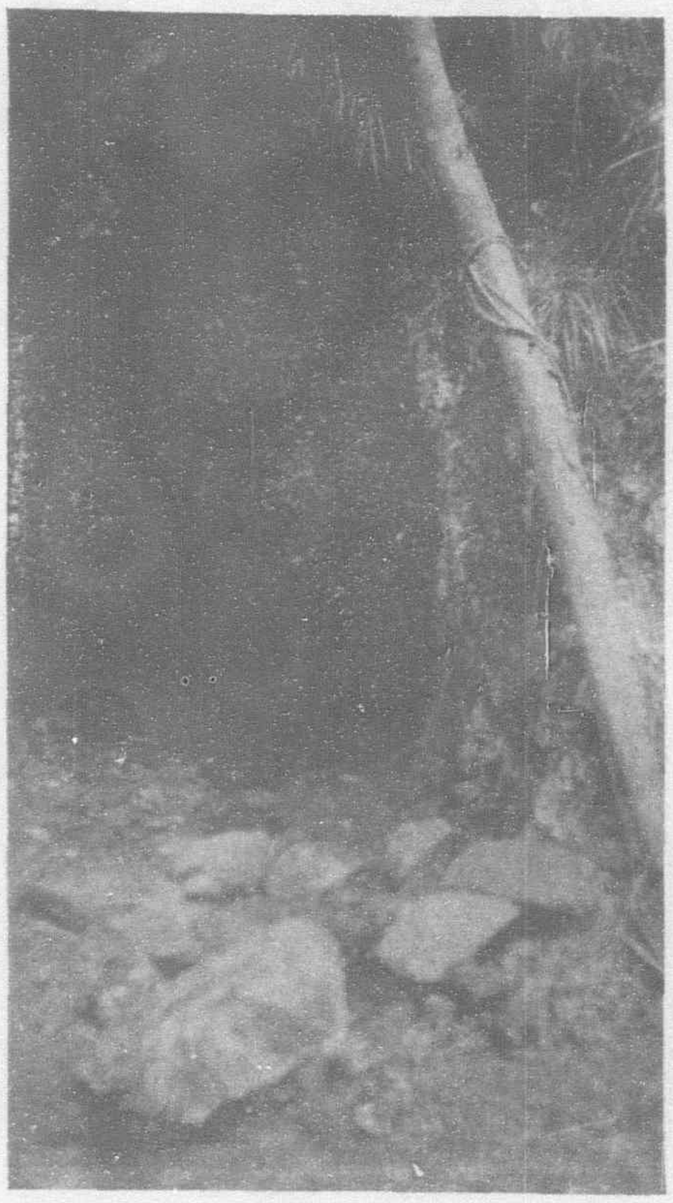


Looking across gulch, showing company houses and face of cañon. Four ledges rise perpendicularly from water level to crest of mountain, 2000 feet high, in widths of from 10 to 45 feet.

The great "Robinson" ledge, 45 feet, 2000 feet high, with lode as broad at crest of mountain as at water level. This ledge can be followed for 15 miles across country.

A view of face of cañon on company's property.

VIEWS ON PROPERTY OF THE PHILIPPINE



GOLD MINING, POWER & DEVELOPMENT CO.

The first American Stamp mill in the Philippines. Used for making practical mill and plate tests.

Mouth of Tunnel No. 2, cross-cutting a ledge 35 feet wide.

The three living houses for superintendent and family. The cañon wall to left rises 2000 feet in height.

Japanese miners at mouth of Tunnel No. 1.

Improvised tramway leading to mines.

General view of the Benguet country.

Looking N. E. from company's property into the Antimioc country.

THE PHILIPPINE GOLD MINING, POWER & DEVELOPMENT CO.

From all indications the Philippine Islands are very highly mineralized. One has but to follow the work of the genuine American miner and the investigations of the Mining Bureau of the Insular Government to be convinced of this fact. Those who question the existence of great and universal deposits of minerals in the Islands are usually found in the class who have "grub-staked" some irresponsible party to the limit of a few hundred dollars, and because the alleged miner did not come back with "his millions" at once raised the cry of "No gold in the Philippines."

The proper and successful development of the mining industry in the Philippine Islands is not a "poor man's proposition." It is solely dependent upon the combined action of the Government, of individuals, and of capital. And in this connection it may be said that it is the unanimous opinion of all mining men who are familiar with the situation that no great progress or development of the quartz mining industry will ever take place until Section 33 of the present Mining Code is abolished. The situation demands a swift and certain action by the lawmakers removing every influence, condition, and law which nullifies every honest attempt of American capital to better itself, and in an increased ratio the internal affairs and general success of the Philippines. It is not derogatory to the Filipino to say that he will not take up this important branch of industry for several generations to come, owing to his lack of organization and his training as a race along these lines. In spite of discouraging conditions and mining laws which prospectors and promoters claim badly cripple extensive efforts, and in the face of repeated predictions of failure, a number of mining companies are going ahead slowly to the success that waits on long-continued and persistent endeavor, and concentrated efforts of several years of labor to a certain end.

The Mining Bureau, with the assistance of its efficient and scientific staff, has done splendid and useful work in mineral development. Behind this branch of the Insular Government stands the Bureau of Insular Affairs at Washington which is doing all it can to bring to the notice of the American people and the world at large these great resources. Not long ago it issued several official documents which are worthy of careful consideration. On page 82 of *The Philippine Gazetteer*, published by the American Government at Washington, will be found the following extract under the head of "Mineral":

"The use of gold in exchange and adornment and copper for utensils was common among the natives upon the first landing of the Spaniards. The mining of metals was never systematically encouraged by new occupants of the islands. The native methods were, and still are, confined to placer gold washings, their methods of working quartz being primitive and unsatisfactory. Foreign enterprise has invariably been attended by failure owing to revolutions, burdensome laws and regulations, scarcity of skilled labor, and impracticable expenditure of working capital.

"Since American occupation, miners and prospectors have often preceded the troops. The mining bureau at Manila, by direct report through the miner or prospector himself, or officers of the army, who have come upon these pioneers, has reports from almost every island. In a majority of cases samples and specimens have been furnished to indicate that the mining industry in the Philippines will meet every expectation. Through these sources the fact has been established to the satisfaction of the bureau, that gold, copper, lead, iron, coal, sulphur, granite, marble, petroleum, and other metallic and iron metallic minerals exist in paying quantities. The influence of the miner and prospector is making itself felt, repeating the experiences of the pioneer days of the mineral producing States of the West."

Among the first miners to come to this country from the homeland and Alaska was Mr. H. J. Robinson. Five years ago he and a few other pioneer prospectors went into the Benguet country and thoroughly prospected it. As a result of his investigations he located five claims. A company was organized as soon as the mining laws were passed. It is known as the Philippine Gold Mining, Power, and Development Company, and is incorporated under the laws of the Territory of Arizona. The company raised money and purchased a Joshua Hendy 10-stamp mill which has been brought to the Islands and at the present time is being transported from Dagupan to the company's property, Camp Robinson, about 3½ miles from Kias, or Camp No. 4, on the famous Benguet Road. The officers and directors of the company are Dr. James F. Kemp of Washington, D. C., and Manila, President, Mr. W. S. Gray, Secretary and Manager, with offices in San Francisco, Mr. A. W. Marshal, of the Southern Pacific Railroad Company, Vice-President, and Mr. George B. Griswold of Los Angeles, Cala., and Mr. John J. Myers, of San Francisco, also members of the Board of Directors. The company's claims are all located on Batwang Creek, a short distance from the North Batwang River, where a fine site is secured with no less than twenty-five miner's inches of water for electric power for the mines, and also to supply Baguio under contract. The developments consist to date of about 4,000 feet of tunnels and cross-cuts. No hoisting nor fuel are needed and native labor can be had at 50 cents per day. The veins are between granite and slate, with strong gouges porphyry of 1½ to 3 feet wide between the slate and veins. The veins are from 100 to 800 feet wide, running 1,000 to 2,000 feet or more without a break, carrying free-milling ore which it is estimated will run from $30 to $50 per ton, and some good-sized spots into the thousands of dollars a ton. The ore reserves, without exaggeration, run into millions of tons, enough to keep the new 10-stamp mill now on its way there running for a hundred years. Along the same belt are the Iams, James, Palmer, McDonald, Peterson, Gold Dollar Nixon, Clark, Gilf, Patga, Oregon, Simpson, and other promising claims.

So far the largest and richest quartz veins of free-milling gold have been discovered in the Benguet country. Few of the properties already have machinery and others are placing modern stamp mills and electric plants, using modern tools and American methods. Several hundred American miners are in this district, and they employ many natives.

The Superintendent of the property at the mines of the Philippine Gold Mining, Power, and Development Company is Mr. Harols E. Robinson, a son of the original locator of the property, a young man of wide and unusual experience in practical mill work. The company has its own mill building practically completed. In addition it has an assay office in operation with a full and complete equipment. Nearby are quarters for the Japanese miners and the Igorrote workmen.

The motive power of the company's mines will be water, thus saving the enormous and continued expense of engines, boilers, and fuel. Within 100 yards of the mill and on the property of the company is a series of waterfalls which never go dry. This assures a continuous and ample supply of water to run an outfit 500 times as large. This mill would have been in operation by August of this year at the latest, but for the rainy season that come on just as the promoters were ready to move the machinery from Dagupan where it lay since the latter part of June of this year.

The Benguet Road is now completed within 3½ miles of the mining belt. Without this road it is not likely that a 10-stamp mill could have been taken into that region, and while it may not appear at this time to a thinking observer, it is nevertheless a fact that the foresight and wisdom of building the highway into this remarkable region of gold and copper will result in opening up to the World one of the greatest mining regions known. Such a statement may seem extravagant and yet one has but to go to the property of the Philippine Gold Mining, Power, and Development Company. There he will see with his own eyes a main ledge 45 feet wide, standing almost perpendicular and raising from the water level at the mouth of tunnel No. 1 to a height of 250 feet, then making a slight slope and shooting up again to a height of fully 2,000 feet, the outcropping just as wide at the top as at the bottom. This should be convincing and it would mean that a tunnel driven 1,000 feet into the mountain at water level would, at its farther end, have a body of ore 2,000 feet in height above it and about 45 feet wide. Parallel to this wonderful lode and entirely separate and distinct from each other, are other lodes of various width rising in like manner from water level to crest of mountain. You might inquire how far this condition extends. He who wishes to investigate can follow this same ledge for fifteen miles across the country to the East.

NEW LAW COURTS

(Continued from page 23.)

The principal elevation of the structure is to face towards the west, and will consist of a single Ionic order some forty-five feet in height, forming fifteen bays with attached columns and square angle piers. The piers are interconnected by semicircular arches supporting the floors of the colonnade above with ornamental balustrades and moulded copings, all in granite. Between the piers and the main walls on the ground floor is a wide colonnade entirely surrounding the building except for a small portion on the east side. This colonnade is spanned by a series of semi-circular arches which support the walls and floors above. The upper colonnade runs round the greater part of the first floor, above which is a balcony to the second floor, access to both being afforded by folding casement doors. The colonnades will be finished with finely punched granite walls and arches, and tesselated pavements. The centre portion of the west elevation is surmounted by a pediment containing one semicircular opening, around which are grouped the Royal arms, and the whole is crowned by a statue of Justice, standing nine feet high. Behind this pediment rises the square base of the central dome, which is terminated at each angle by a graceful pinnacle built of granite. From this base the drum of the dome ascends, consisting of a circular Doric order, the intercolumnar spaces being pierced with windows. Above this rises the graceful outline of the dome, the whole being surmounted by a handsome granite lantern, terminating, at a height of over one hundred and thirty feet from the ground, in a boldly carved Tudor crown.

The elevation on the north, south and east sides will be similar in character to that on the west, but without the pediment, each facade being finished with a parapet wall and granite balustrade.

The foundation stone, a fine block of Chinese granite, which was laid by H. E. Sir H. A. Blake last month, bears the following inscription in guilt letters:—

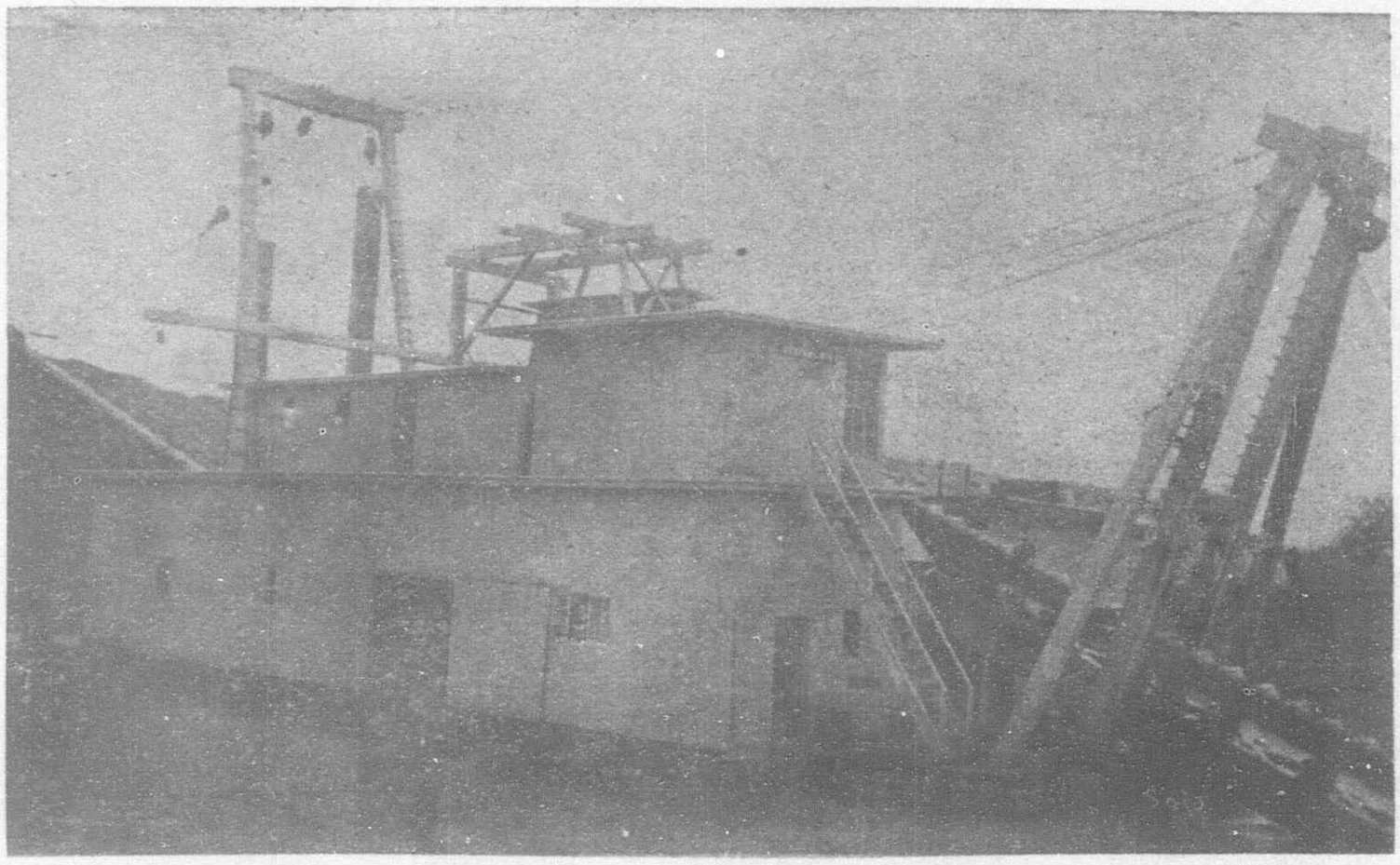
THIS STONE WAS LAID
on the 12th November, 1903,
by
His Excellency
SIR HENRY ARTHUR BLAKE, G. C. M. G.,
Governor of Hongkong.

WILLIAM CHATHAM, M. Inst. C. E.,
Director of Public Works.

ASTON WEBB, R. A.,
E. INGRESS BELL, F R. I. B. A.,
Architects.

CHAN A TONG,
Contractor.

GOLD DREDGING IN THE PHILIPPINES



GOLD DREDGE IN OPERATION.

Of the many devices adapted to the economical operation of modern mining, the gold gravel dredge is many ways the most unique. Operating on the same principle as the familiar harbor dredges, it combines, in addition, all the requisite mechanical devices for the recovery of the precious metal deposited twenty to fifty feet below the surface, and converting it into bullion. In principle, the old forty-niner, with his pick, shovel, wire screen, and shine box, was a diminutive dredge, carrying out the crude operations which have been enlarged upon and modified to suit the application of machinery. The modern dredge is built on a large flat bottom scow, capable of ascending the most shallow streams or operating in the deepest rivers. Briefly described, the digging apparatus consists of a long ladder-like frame, fitted with a sprocket wheel at both ends, the upper wheel transmitting the power to an endless link belt to which are riveted steel buckets at suitable intervals. Every one is familiar with the mechanical operation of an ordinary dredge, as employed in harbor work, and the same method is pursued in gold dredging to recover the gravel. Its application makes it possible to bring gravel to the surface from a depth of fifty or more feet and pass it through the other processes of recovery all aboard the scow.

The gravel after being elevated from the bed of the stream or river, is passed through a revolving screen, the coarser parts being delivered to a travelling belt which carries it out over the stem of the scow, dumping it back into the water. The finer particles of sand and gold fall through the meshes of the screen on to a series of shines, where the gold, by virtue of its specific gravity settles amidst the riffles, arranged along the bottoms, while the fine sand and gravel are carried off by the current of water and pass out again at the stern of the scow. At suitable intervals each shine is cleaned out by hand, and the particles of gold collected by means of quicksilver. The latter is then volatilized by heat, leaving the pure gold which is melted and cast into bullion. The entire operation is carried out aboard the scow, within a space of ninety by forty-five feet.

The cost of operation is wonderfully low, as compared with other methods of mining. The compact arrangement of the plant, use of gravity, and mechanical devices, obviate the necessity of a large force, and two men for each eight-hour shift, can carry out the entire operation. A dredge, having a capacity of 1600 cubic yards per day requires approximately 100 horse power to operate it. Necessary repairs, of course, also enter into any calculation of operating expenses. A dredge of the above capacity in California has been operated at an expense of about five to seven cents per cubic yard. At this low working cost, the handling of gravel having only twelve to fifteen cents per cubic yard becomes a profitable undertaking.

The recovery of gold by dredging was first successfully worked in New Zealand, more than a dozen years ago, and the application of this method has proved so profitable that at the present time over one hundred dredging outfits are in operation in various parts of that colony and Australia.

Dredging in California is of a more recent date, its use gaining a great impetus after the passage of the law prohibiting hydraulic mining, under which system vast amounts of sediment were carried down the gulches, and deposited on the farming lands. There are now some thirty dredges in operation in the state, and several under construction. These brief facts show how rapidly this form of mining has developed within the last few years. Under this system, workings and deposits, which were hitherto considered as impossible and unprofitable, have developed into fine dividend earners, and the eyes of the mining world have been directed along these lines with increasing interest, and new fields are eagerly sought for. With this end in view a syndicate was formed in Boston, in the fall of 1903, to investigate the gravel deposits of the Island of Masbate.

Their engineer and mining expert, Mr. Fred L. H. Kimball, was sent out, and he spent several months thoroughly drilling and testing the gravel on the property, with such excellent results, that immediate steps were taken on his return to start active operations.

The Philippine Mining Co. was organized and an order placed with the Risdon Iron and Locomotive Works of San Francisco for one of their most modern bucket dredges. The dredge has since been completed, shipped to the Islands, and is now being erected on the property under the supervision of Mr. Kimball. Work has progressed favorably, and we are informed that the dredge will be in operation about April first. So much confidence is placed in the certainty of good profitable returns, that several more dredges will be ordered and placed in operation in the near future.

This is the first attempt at gold dredging in the Philippines, and the venture is being watched with the greatest interest. Its success means the opening of a wide field for the investment of capital, and will bring to the Islands many new firms interested in these lines. Mr. H. D. McCaskey, Chief of the Mining Bureau, has rendered great assistance to the new enterprise, and the mining interests in general are lending it the heartiest support and best wishes.

NEW WHARF AT CORREGIDOR

The Atlantic, Gulf, and Pacific Company has been awarded a contract for the building of a new wharf in the cove at Corregidor Island, directly opposite the present government wharf.

The contract was only let on condition that the wharf be built within ninety days, and the quartermaster's department will furnish the lumber and iron, so that the new landing place may be finished as soon as possible and be available for the landing of materials to be used, presumably, in the fortification of the island in accordance with the plans of the war department.

Under the contract the company is to pay the government eight dollars per thousand, board measure, for the lumber used, and two cents per pound for iron. The company will furnish its own piles.

The wharf will cost in the neighborhood of twenty thousand dollars gold.

The Atlantic, Gulf, and Pacific Company was the only bidder for the contract, and is admirably equipped to push the work to a speedy conclusion.

FRENCH RAILWAY PLANS IN YUNNAN.—It is stated, writes the Canton correspondent of the *China Mail*, that the French are attempting to secure coolies at Canton for the building of a railway in Yunnan. Therefore the French Consul (whether of Yunnan or Canton is not clearly stated) has decided to send out appeals throughout the Two Kwangs, with a view to secure the needed laborers. Those who have been down there and returned affirm that the climate is quite suitable for the coolies of these provinces. Before effect can be given to this intention, the question must be referred to the Foreign Office at Peking, from which orders will be issued to all the high officials concerned to consult and decide what shall be done.

CONSTRUCTION AND ENGINEERING NEWS

ELECTRIC LIGHT, POWER AND TRACTION

THE ORIENTAL TELEPHONE COMPANY, RANGOON.—NEW INSTALLATION.—One of the most interesting and up-to-date installations introduced into this city by the above Company is the new telephone system supplied by Messrs. Ericsson & Company of London.

The old head offices in Merchant-street were found unsuitable for the new installation, and resulted in the Company purchasing Victoria Chambers, in 40th-street, a building that will in future be known as "Telephone House." The southern portion of this block of buildings is now almost fitted up with the new installation, the striking feature of which is the symmetrically designed switchboard, with its interesting sections, over which the operators have perfect command by the nature of its simple mechanism.

The Oriental Telephone Company propose installing the new system of underground cables, which, it is expected, will be completed by the end of next year. In the new system, each instrument has two wires to the Exchange, which will replace the single wire in use. The improvement effected by this change is that the induction, a defect inherent in the single wire system, will be obviated. The whole of the present switchboards were ordered in December last. It took the manufacturers some eight or nine months to complete them at home and delivery was taken in August. They were specially made for Rangoon in this respect, that all wood-work throughout is of solid teak, and all metal parts are either of brass or aluminum, except where iron had to be used for magnetic purposes. At present the new installation provides for 750 connections, but it will have an ultimate capacity for 3,600. The switchboards are divided into sections of 80 subscribers to each operator, which is the smallest the manufacturers make. At home it is the custom to work 120 subscribers to an operator. The switch-boards are multiple ones, in which the subscribers' numbers are multiplied throughout the board in such a way that each operator can connect one subscriber with any other subscriber he likes, without leaving his position, or calling in the assistance of any other operator. The switch-board also contains a distributing test board, fitted with lightning arrestors and high tension fuses, to guard against the telephone wires coming in contact with electric light or tramway wires. There are also heat coils, to prevent small currents of electricity causing damage. Further, there is also a complete testing plant for testing faults either inside or outside the exchange, by a means which entails no difficulty in locating breakages in the wires.

Altogether, the new system has been built according to the very latest practice in telephonic work, and will probably be adopted in an exchange such as Karachi, Singapore, and other places. With the present number of subscribers, the Company receives about 6,000 calls a day on an average.

The present plant completes the first part of the new scheme. Next month, or before the end of the year, as already stated, the Company will start on the outside part of the scheme of putting all wires underground, in cables, making a double wire system. These cables vary in size, the largest containing 204 pairs or 408 wires in a cable. They are lead covered and drawn into 3 inch cast iron pipes. The Company are putting down cables to supply double the present number of subscribers, and, in addition, spare pipes, to double that number again. This means that the Company are putting down wires in cables to supply 1,200 subscribers, and spare pipes which will enable them to bring the number up to 2,400, approximately. In the underground cable scheme there will be about 3,000 miles of copper wire. The total amount of cable is 30,000 yards and the 204 pairs cable weighs about 15 tons per mile. The complete scheme, including the present building, is expected to cost the company somewhere about Rs. 3,00,000.—*Rangoon Times.*

DARJEELING ELECTRIC LIGHTING.—The Darjeeling hydro-electric installation, which was the pioneer undertaking of this class in India, has gone through many vicissitudes and survives its ill-fated contemporaries, the Pasteur Chamberland filter and the steam laundry. At the time of the earthquake it was in course of construction and suffered very little, but the subsequent cyclone wrecked many of the lines and left the electrical plant buried in mud. We hear that extensions are now being carried out to the plant, and also that many of the lines in the station are being strengthened to carry the additional power. The use of the Hospital Jhora has been virtually abandoned and in place of it a channel has been brought in from the Barbhutra Jhora, crossing the gorge on a suspension bridge made up from the materials of the old conservancy telpher line. New settling tanks have been built at the sources to prevent the present excessive wear of the galvanized iron channels and the rapid filling up of the reservoirs. The water will be brought first into the original reservoir of some 40,000 cubic feet capacity, which will be kept always full in reserve; thence it will overflow into the large new tank now completed, holding some 80,000 cubic feet. The supply will be taken from the latter, so that despite the large amount of sediment always found in hill streams, the turbines will be sure of a clean supply. A new 200 H.-P. turbo alternator, supplied by the General Electric Company, of London, will be connected on to the existing pipe line and will supply the ever-increasing needs of the station.—*Indian Engineering.*

ELECTRIC TRACTION, WELLINGTON, NEW ZEALAND.—The New Electric Tram Service to which the Wellington municipality stands committed is being energetically pushed on by the English contractors, Macartney, McElroy & Co. A good length of the main route has been running for a few weeks, and other routes are being rapidly prepared for the laying of the rails. So far the trams are giving general satisfaction, and are quite revolutionizing the appearance of Wellington.

ELECTRIC ELEVATORS, QUEENSLAND.—Tenders were recently invited for three electrical lifts for new Lands and Survey Offices in George-street, Brisbane. The following offers were received:—Standard Electric Elevator Co. Ltd., £3800; Waygood Elevator Co., Melbourne, £2670; Brush Electrical Engineering Co. Ltd., £2435; Brisbane Electrical Supply Co. Ltd., £1875; Sydney Hydraulic & Engineering Co. Ltd., £1867; Rolley & Padgett, engineers, Mary-street, Brisbane, £1775.

CAUVERY POWER SCHEME, INDIA.—Of large projects being carried out by the go-ahead state of Mysore in Southern India, the Cauvery Power Electric scheme is probably the most important. The first installation has been completed, and is yielding the State a handsome revenue. According to a recent official report the second installation for an additional 2,000 horsepower at the Cauvery Falls applied for by the Gold Fields has progressed rapidly and will shortly be completed. The estimate for the second installation is Rs. 13,10,000, of which Rs. 6,45,000 have already been incurred. All new buildings are now ready and nearly all the plant has been brought to site.

WIRELESS TELEGRAPHY, INDIA.—Mr. M. G. Simpson, Electrician to the Indian Telegraph Department, has begun an installation of the wireless telegraphic system at Port Blair. A suitable site has been selected in the neighborhood of the Female Jail, on the opposite side of the Harbor from Ross Island, and two masts, 180 feet in height, of the four which it is proposed to erect, are already in position. It is expected that within the next month or two the installation will be completed.

ELECTRIC LIGHTING, CANTON.—The Canton correspondent of the *China Mail* states that the authorities at the police station in the Western suburbs of Canton have repeatedly urged that all the streets, for the good order of which it is responsible, shall adopt the electric-light. This, it is said, will greatly facilitate the keeping of good order and suppression of thieves. Now, seeing that winter is approaching, several streets have decided to introduce it, and then, as the Chinese say, they will be lighted even as the light of day. Thereby the police will be greatly assisted in the discharge of their duties.

ELECTRIC POWER FRANCHISE, PHILIPPINES.—The Philippine Commission has granted a concession to Ignacio Arnalot, of Tayabas, to utilize the water power of the Ibiang Munti and Ibiang Malaqui rivers, situated between the towns of Lucban and Tayabas, for the purpose of generating electric power and transmitting same to the factory now owned and operated by Arnalot in Tayabas. The concession also permits the grantee to furnish power to the public, subject to the tariff regulations as may be exacted by Act of the Commission.

ELECTRIC TRACTION, PENANG.—An electric traction system is to be constructed in Penang, Straits Settlements. The British electrical engineering firm of Preece & Cardew, No. 8 Queen Anne's Gate, Westminster, London, S. W., is acting as consulting expert in the matter.

ELECTRIC LIGHTING, AUCKLAND, N. Z.—An electric light plant is to be constructed at Auckland, New Zealand, at an estimated cost of about $375,000. There is a big electric power plant now under operation there which supplies current for the electric traction system built by J. G. White & Company and controlled by the British Electric Traction Company, but practically all the energy is consumed by the road.

ELECTRICAL EQUIPMENT, INDIA.—The General Electric interests have secured an important contract for equipment, supplies, etc., for the East Indian Railway.

POWER PLANT, CALCUTTA.—The Calcutta Dock Commissioners have decided on the letting of contracts for the construction of a power plant at the Kidderpore docks, which will mean the expenditure of fully $100,000 for equipment. The General Electric Company, which has a Calcutta office, and the Westinghouse interests, represented by the British firm of William Jessop & Co., Limited, of Calcutta, for India, upper and lower Burmah and Ceylon are figuring on the work.

LIGHTING, TAIPING, F. M. S.—The *Perak Pioneer* says that Messrs. Huttenbach, Bros. and Co., Penang, have secured the tender for supplying Kitson lights for Taiping. Nine lights of 1,000 candle power and 10 of 500 are to be supplied by the 31st Jan. 1905.

PENANG LIGHTING.—The present contract with Messrs. Huttenbach Bros. and Co., for lighting the town with oil has been extended for a further period of one year.

ELECTRIC LIGHT AND POWER, SIMLA.—The cost of the scheme for providing Simla with an additional six hundred thousand gallons of water daily, with electricity for lighting purposes, as recommended by the waterworks committee, is ten lakhs of rupees initial expenses, with an annual outlay thereafter of one lakh of rupees, including interest, depreciation, repairs, and establishment charges, but only a portion of this outlay need be incurred in the first instance, as the scheme consists of several installations, which would be set up one after another, as the requirements of the station justified the outlay. The committee consider that an increase of only two hundred thousand gallons daily should be provided in the first instance. They also advise that a bye-law should be passed requiring houseowners who have gardens to provide tanks for storing roof water. They hold that the scheme proposed by General Beresford Lovett, though feasible with extensive modifications, from an engineering point of view, is put quite out of court as a practical solution of the problem of extending the Simla water supply, by its original high cost, its high maintenance charges, and the enormous sacrifice of power it entails. The report of the Simla Water Works Committee is published as a blue book. It shows that the committee have rejected General Beresford Lovett's scheme for obtaining water from the Sutlej and recommended instead another arrangement whereby the north side of Mahasu would be utilized as an additional catchment area. The electric power for both pumping and lighting the station is to be obtained by the erection of turbines in Nautikhud Gorge.

ELECTRIC LIGHT, MADRAS.—MADRAS, Nov. 1.—At a general meeting of the Municipal Commissioners last night they adopted the report of the Committee appointed to consider the applications of Messrs. Crompton & Co. and Messrs. Burn & Co. for electricity licenses to light Madras and supply power. The Committee, after discussing the relative merits of the offers of the two companies, decided in favor of Messrs. Crompton & Co., and recommended that the option of purchase should be exercised at the end of 21 years instead of 42 years, renewable every subsequent seven years.

ELECTRIC TRAMWAY, PENANG.—The Commissioners have accepted the tender of Messrs. The Brush Electrical Engineering Company, Limited, for 9 open cars and 1 composite car, all to be made of teak. The rails for laying the town section of the line should be out here by about the middle of November.

WATERWORKS, DRAINAGE, IRRIGATION

WATER SUPPLY, SYDNEY.—The works at the new Cataract dam are progressing very slowly. So far no actual cement work has been done, the operations, at present, being confined to the foundations for the dam. The Minister for Works has been urged in American phraseology to "get on a hustle." At the present rate of speed very few of the present generation will live to see the project completed.

SEWAGE, NEWCASTLE.—The Sewage Scheme for the city of Newcastle, New South Wales, and the adjoining districts has made very little progress during the last six months, owing to the shortness of Government funds, the few hands being still employed in the first section of the main gravitation sewer at Merewether.

CAUVERY IRRIGATION EXTENSION PROJECT.—The estimates for the Cauvery Irrigation Project have been sent by the Government of Madras to the Government of India. It is proposed to construct a reservoir at Nauranjipett, 24 miles above Bhavni. Its capacity will be 40,000 million cubic feet, and it is designed to protect 1,177,330 acres of old and new cultivation.—*Indian Engineering*.

IRRIGATION, SIAM.—Mr. Consul Beckett's report from Bangkok contains a notice of an extremely interesting report on the question of the irrigation works which should be undertaken by the Siamese Government. It is by the Director of the Irrigation Department, an officer of the Government of Netherlands India whose services have been temporarily placed at the disposal of the Siamese Government. He recommends a scheme for irrigation and drainage embracing (1) the improvement of the "klongs," or canals of different sizes already existing in most parts of the Lower Menam Valley, and (2) the construction of a supply system consisting of a great weir across the Menam River at Chainat and of three main canals—one on the right bank, one on the left—and a canal called the "Supan Main Canal," reaching from the weir on the Menam to the mouth of the Meklong River, with head sluices, distributory works and navigation locks, and of a system of distributory canals with proper arrangements for water supply and navigation. Various difficulties present themselves to the execution of such a scheme, but there seems to be no doubt that much may be done for the country by irrigation. In the meantime minor works are being carried out in the immediate vicinity of Bangkok, such as the draining of the site of the silk culture establishment in order to prevent the mulberry trees being damaged by too much water, with which is connected the draining of the adjoining marsh for the new site of the royal educational establishment known as King's College.—*Com. Int.*

NATIVE WATER WORKS CO, SHANGHAI.—It is learned that the Native Water Works Co. is on the eve of success, and has undergone much improvement since the business was under the control of Prefect Li. Among the regulations drawn up, there is one providing for the construction of water-taps. This has proved to be a great inducement to the natives in general to use properly filtered water at a cheap rate, and already no fewer than five thousand houses in the native city are using it.—*Sinwanpao.*

WATER WORKS, SHANGHAI.—The Shanghai water works has applied for permission to lay water pipes for the districts beyond the Range Road, but the Shanghai Taotai will not permit this, saying it is outside the treaty port, being under jurisdiction of Paoshan-hsien.—*Sinwanpao.*

IRRIGATION, PUNJAB.—ALLAHABAD, Nov. 2. Final orders regarding the big scheme of irrigation in the Punjab will shortly be issued. The necessary plans and estimates have been prepared, and the final arrangements have been thoroughly threshed out. The work will last ten years, if not longer.

DRAINAGE, KARACHI, INDIA.—It is notified in *The Bombay Government Gazette* that the sum of Rs. 5½ lakhs which the Karachi Municipality propose to borrow for the purpose of extending the drainage system will be raised by it at 4 per cent. interest per annum instead of 4½ per cent. interest: the amount of interest payable during the first year will therefore be Rs. 22,000 instead of Rs. 24,750, and the average annual payment as interest will be Rs. 11,270 instead of Rs. 12,679. All other conditions stand the same as in the original application.

WATERWORKS. SARAWAK, BORNEO.—The Sarawak Estimates for 1905 show an expected revenue of $1,054,140, against expenditure of $1,270,497. Of the expenditure $218,745 must, says the *Sarawak Gazette*, be reckoned as abnormal, being for the construction of the New Water Works. If this were removed, the estimated expenditure would stand at $1,051,752, leaving a small surplus.

HARBOR WORKS, DREDGING

YOKOHAMA HARBOR WORKS.—In view of the approached arrival at Yokohama of the Oriental liner *Minnesota* from America, the work has been steadily carried out of dredging over 35 feet along the eastern wing of breakwater near the harbor mouth, which section is comparatively deep, and it is expected to be completed by soon. As steamers larger than the *Minnesota* are expected here in the future, the authorities have already dredged another point to a depth of 33 feet on the north side of the pier and also a point 32 feet deep on the straight line of pier. They are contemplating the completion within seven years of the dredging of one million *tsubo* out of the total area of 1½ million *tsubo* in the harbor, exclusive of proposed official and private reclamation area. The *Asahi* says that the Yokohama Customs authorities have applied to the Department of Finance for an extraordinary appropriation for the construction of import sheds on the newly-reclaimed ground with a view to averting the present accumulation of goods in this port. As for repairs of the breakwater, the authorities introduced an estimate of Y.1,080,000 in the Diet last year, but owing to the dissolution no appropriation could be obtained. Meanwhile the state of the eastern wing of the breakwater has grown worse, causing fear that the entrance to the harbor will be blocked unless immediate repairs are executed in the vicinity of the lighthouse. The Government, therefore, issued Y.25,000 from last year's reserves and Y.95,000 from this year's, ordering repairs of the eastern wing to the length of 90 *ken* out of 500 *ken* damaged. The work has now been nearly completed, and the entire conclusion of the operations is promised at latest by January next. The construction of embarking jetties, along which steamers are to be moored, is also progressing in the harbor.

NEW NAGASAKI DOCK.—The Kokumin states that the Dock No. 3, now under construction, of the Mitsu Bishi Dockyard, Nagasaki, will be the largest in the Far East, admitting vessels up to 714 feet in length. The Dock No. 1 of the same Company admits vessels up to 510 feet in length and the No. 2 up to 350 feet. The new dock is to be completed by the end of this year.

CANTON BUND.—CANTON, November 12.—The native press here is urging that the construction of the new bund be handed over to the business people, who will speedily construct it, run it, and keep it in good repair. It is suggested that a bonus of $100,000 be at once handed over to the officials; then a free hand should be given to the company to manage the landing stages, to run rickshaws, to introduce water pumping appliances, and electric light. When the work is finished the market value of the reclaimed land will, it is assumed, be more than $6,000,000. Of this sum, $2,400,000 shall go to the provincial treasury, and the remaining $3,600,000 shall revert to the company and shall recuperate them for what they have disbursed. This scheme is now being seriously considered and it is believed that a good profit can be made. The boundaries have been repeatedly worked out. The cost of construction will be about one million taels. There will be the further cost of about 600,000 taels for sand and rubbish for the filling in. In addition to the funds derived by the sale of the land, rents and licenses for the landing stages, and the rickshaws, etc., may be expected to bring in more than ten thousand dollars yearly. Since this scheme has been discussed, business firms have been eager to secure plots, and, if the work is vigorously pushed forward, it can be completed within a year. But the officials who now have the work in hand don't understand and cannot comprehend business. They have already raised the price of the land so high that merchants content themselves with going to look at the plots without buying. Moreover the provincial treasury cannot find the necessary capital, and, therefore, if it is left in the hands of the mandarins, the work will drag on to an interminable time. The old bund is an example of what they are wont to do. If the officials cannot push the thing forward, they should hand it over to a vigorous company. It may

be expected that those who occupy plots on the river front will oppose, and perhaps will litigate; moreover where foreigners are concerned there must be caution; but those who think that business people cannot put the thing through, but will have to trust to the officials, will find themselves mistaken.—*China Mail.*

BOMBAY PORT TRUST.—The revenue receipts of the Bombay Port Trust from all sources, including the interest and pilotage accounts, for the half-year ended 30th September, were Rs. 30,67,000, and exceeded the receipts for the corresponding period of last year (which were the highest on record) by Rs. 39,000. The result is satisfactory and indicates a continuance of prosperity attending the trade of the Port in Bombay.

WHARF, TIENTSIN.—A fine wharf has now been constructed along the front of the Nippon Yusen Kaisha's new building in the Japanese Concession, Tientsin. The wharf is 300 feet long and 24 feet wide, and has just been completed. It will soon become one of the busiest places in Tientsin.—*China Times.*

RIVER CONSERVANCY.—A meeting of the Haibo Conservancy commission was held at Tientsin on November 14. Mr. Detring, the Commissioner of Customs, stated that at the present time steamers 260 feet in length could go alongside the Bund, and the effect of the three cuttings made was to shorten the distance from Taku to Tientsin by nine miles, enabling vessels to go up in four or five hours. The next main trouble was the removal of the bar at the mouth of the river, which was a charge on the trade of the port of at least 500,000 taels per year. For an outlay of 300,000 taels the necessary appliances could be obtained and within fourteen working months a channel 500 feet wide could be made to admit vessels drawing twelve feet. In order to provide funds for the removal of the bar it was resolved that the Cousular Body and representatives of the trade of the port take the steps required to move the Imperial Chinese Government and the Diplomatic Body to sanction the levying of Bar Dues as follows: On vessels that pass the Bar, 15 HkT. cents per ton of net registered tonnage. On vessels that do not pass the Bar, 15 HkT. cents per ton of cargo loaded or delivered outside the Bar.

SHIPBUILDING

MOTOR LAUNCHES, HONGKONG.—Mr. E. C. Wilks, of Messrs. Wilks & Co., is constructing another motor launch, designed for harbor work. When Mr. Wilks was in France recently, he bought a motor-car, which he ran for eight or nine months in the country, covering, during that time, sixteen or seventeen thousand miles. From this experience he formed an opinion that there was a great future for petrol (refined petroleum) engines, which was confirmed when he saw motor launches, both in France and at Southampton, steaming 19 knots an hour. On returning to Hongkong he built a 40-ft. long, 20 horsepower launch, driven by a Daimler motor. She is a 10-knot boat, and is now running in the harbor, giving excellent results.

GUNBOATS FOR CHINA.—H. E. Viceroy Chang Chih-tung has lately signed an agreement with the representative of a Kobe shipbuilding company for the immediate construction of a number of light draught gunboats and torpedo-boats, namely, six light draught gunboats, speed thirteen knots, at Yen 455,000 each, and four second class torpedo-boats, speed twenty-three knots, at Yen 300,000 each, or a total of Yen 3,930,000 for the ten vessels, to be delivered over at Kobe within the period of twenty-six months. A bargain money of Yen 560,000 was paid by the Chinese officials on the signing of the agreement.

KAWASAKI DOCKYARD, NEW GUNBOAT.—Invitations have been issued by the Kawasaki Dockyard Co. of Kobe for the launch on the 16th November of the gunboat *Kiang Yuen*, built by them for the Chinese Government. The vessel has an overall length of 170 feet; beam, 28 feet; draught, 7 feet; giving a displacement of 565 tons. She is fitted with twin triple expansion engines with an indicated horsepower of 950. The engines are supplied with steam from a pair of Yarrow boilers, and her speed is to be 13 knots. Her small armament consists of one 12 c. m. gun, one 12-pr., and four machine guns.

MISCELLANEOUS

WATER WHEELS, D. E. I.—The Pelton Water Wheel Company—New York offices, 143 Liberty street—has recently secured some substantial orders for water wheels to be installed in quarries, also coffee and tea plantations, in the Dutch East Indies.

MACHINE TOOLS, JAPAN.—The Niles-Bement-Pond Co., of 136 Liberty street, has secured a substantial contract for machine tools for shipment to Japan, where they will be installed in Government arsenals and shipbuilding yards.

CONSTRUCTION TOOLS, INDIA.—A. O. Norton, of Boston, has secured a contract through Selig Sonnenthal & Co., of London, fair-sized handlers of American machinery for the British Indian Empire, and Colonial markets, for large traversing jacks to be used in Indian railroad construction work.

TOOLS, INDIA.—The Chicago Pneumatic Tool Company has secured a contract for pneumatic tool equipment to be put in the Jamalpur Railroad shops, India.

MACHINE TOOLS, JAPAN.—Contracts have been let very recently for the shipment of fully $2,000,000 worth of American machine tools to Japan. The orders were principally allotted to the Niles-Bement-Pond Company, New York; Manning, Maxwell & Moore, the Prentiss Tool and Supply Company, Lodge & Shipley, of Cincinnati, Ohio, and the Browne & Sharp Company, of Providence, R. I. The machinery will be shipped through Mitsui & Co., Silk Exchange building; Takata & Co., of 10 Wall street, and Okura & Co., Bowling Green building. Further substantial contracts will be placed very shortly.

STEEL RAILS, KOREA.—About 18,000 tons of steel rails have been shipped to Korea within the last thirty days or so by the United States Steel Products Export Co., which concern looks after the foreign trade of the United States Steel Corporation. Three British vessels have been chartered for the purpose of conveying the material. The steamship *Inverness* is now loading at Tacoma, Wash., with part of the rails, and the *Hero* and *Quinto* will carry the balance from the same Pacific Coast port.

GUN FACTORY, INDIA.—The new gun factory which is to be established by the Government of India at Ishapur will have a much more important character than was originally expected. It will not only be able to turn out close upon 30,000 weapons annually, but to manufacture the component parts of the weapon and to undertake all kinds of repairs. The completion of this factory will mean that India will be, in this sense as well as in regard to the supply of its ammunition, self-supporting.

BEACON LAMPS, KOREA.—The Edmundson Engineering Co., of Dublin, has received instructions from the Chief Commissioner of Korean Customs to supply for the Channel Rock Beacon Eusan, Korea, one of the Wigham 31-day lamps.

LOCOMOTIVES, INDIA.—The Southern Mahratta Railway Company is about to secure figures on twenty locomotives. Specifications, etc., can be secured through the London offices of the company, 46 Queen Anne's Gate, S. W.

NANKING-ANCHING RAILWAY.—It is reported from Peking that a Chino-American syndicate has applied to the Department of Commerce for permission to construct a railway between Nanking and Anching, Anhui province. The syndicate will possess a capital of four millions taels, to be equally subscribed by the capitalists of each nationality.

NEW BUILDING, TIENTSIN.—We learn that Messrs. Hall & Holtz have purchased the land between Messrs. Jardine Matheson & Co. and the Imp. German Post Office for Tls. 25,000. They intend erecting a large building thereon during the coming year. Messrs. Oswald, Loup & Lee have been appointed architects, so we shall be sure to have another fine edifice on our main thoroughfare.—*China Review.*

ROADS, ALBAY PROVINCE.—The Philippine Commission has appropriated the sum of P65,000, Philippine currency, from the Congressional Relief Fund, to be loaned to the province of Albay for the construction of wagon roads from Tabaco to Ligao, and from Guinobatan to Jovellar in said province.

SUPPLY OF PORTLAND CEMENT, F. M. S. RAILWAYS.—The Government is prepared to receive tenders for the supply of best Portland Cement, for the service of the Federated Malay States Railway Department, during 1st half year of 1905 (from 1st January to 30th June, 1905).

Separate tenders are required for delivery of Cement at Port Swettenham, Teluk Anson, and Prai.

The brand of Cement should be stated.

Any further information will be given on application to the Chief Storekeeper, F. M. S. Railways, Kuala Lumpur.

Sealed tenders on forms to be obtained from the Chief Storekeeper, Kuala Lumpur, endorsed "Tenders for Cement," F. M. S. Railways, will be received up to noon on Saturday, 10th December, 1904, and should be addressed to the General Manager, F. M. S. Railways, Kuala Lumpur.

The Government does not bind itself to accept the lowest or any tender.

SUPPLY OF KEROSENE, CASTOR AND COCOANUT OILS, 1905, FEDERATED MALAY STATES RAILWAYS.

Separate tenders are invited for the supply of these Oils for the use of the Federated Malay States Railways for the period, 1st January to 30th June, 1905.

Prices per gallon delivered free to Railway Station.

The Oils to be supplied are to be of the best quality and up to sample, and are to be delivered in such quantities from time to time as may be ordered.

The Oils will be measured on receipt by imperial measure and paid for accordingly.

Sealed tenders (in forms to be obtained at the Office of the Chief Storekeeper, F. M. S. Railways, Kuala Lumpur), accompanied by samples and endorsed "Tender for Oils, F. M. S. Railways," will be received at the office of the General Manager, F. M. S. Railways, Kuala Lumpur, up till noon on 10th December, 1904.

The Government does not bind itself to accept the lowest or any tender.

The Traffic Receipts of the Singapore-Kranji Railway for the ten months ending 31st ult. amounted to $165,131, as compared with $106,-681 in the corresponding period of last year, which represents an increase of 55 per cent. The October receipts amounted to $17,598.

AT the annual meeting of the Yokohama Branch of the American Asiatic Association, held at the U. S. Consulate on the 26th of Oct., the election of officers for the ensuing year resulted in the following appointments:—Messrs. N. F. Smith, President; B. C. Howard, Vice-President; G. H. Scidmore, Secretary; W. L. Merriman, Treasurer; J. W. Copmann, E. S. Booth, F. H. Ziegfeld, D. H. Blake, E. W. Frazar, Chandler Gibbens, and E. Mendelson, Executive Committee.

THE RUSSIAN VOLUNTEER FLEET

From the *Journal de la Marine.*

It is of interest to recall the origin of this fleet. Before the conclusion of the treaty of Berlin, war between England and Russia seemed imminent. At that time Russia had a large number of powerful warships, but they were wanting in speed, and the cruiser-fleet had been entirely neglected; the armored cruisers of the General Admiral type had a speed of 11 knots only. Hence, in 1878, the Government of the Tsar brought from the United States the iron steamers *Europe*, *Asia*, and *Africa*, of a tonnage from 2,500 to 3,000, and of a speed from 12½ to to 13 knots. These vessels were brought to Cronstadt by Russian crews, and there armed with three 6-inch, and six 4-inch guns. The *Zabieka*, of 1,200 tons only, but having a speed of 14 knots, built at Philadelphia from designs of the Russian Admiralty, received two 6-inch and six 4-inch guns. These vessels, manned by Russian naval drafts, were at first real cruisers. It was only about 1880 that they were given up to the volunteer fleet. The latter dates from the Ukase of 30th May, 1878, on the model of the Freiwillige Seewehr, which a Prussian edict of 24th July, 1870, attempted to organize during the war with France. The principal articles of the Ukase are as follows:—

1. The volunteer fleet is created with the object of increasing the naval force in time of war with ready-manned and commanded ships.
4. The volunteer ships or crews who offer themselves will be placed at the disposal of the Minister of the Navy.
5. Shipowners who wish to sell their vessels for the purpose of increasing the war fleet, make a declaration to the effect to the Minister, stating their conditions.
6. If the department approves the ships and the conditions sought to be imposed, the vessels will be entered on the effective list.
7. The crews are put on the active list when they enter the service, and must remain there till the close of hostilities.
8. Commanders will rank as corvette captains, their lieutenants as corvette lieutenants.
9. Officers and crews will have their service under the war flag counted as active service.
10. During that time they are subject to the rules and regulations, for the time being, in force in the Imperial navy.
11. If wounded, they will have the same rights as regular navy men.

A subscription, opened under the patronage of the Hereditary Grand Duke, produced more than 4,000,000 roubles. Hence, between the 2nd and 18th July there arrived at Cronstadt three large German steamers bought from the Hamburg-American line, who took advantage of the political tension to sell their half-wornout ships to be replaced by new ones. One of these vessels was the *Halsatia*, built by Lairds in 1870, and fitted with compound engines and new boilers in 1873. This brig-rigged steamer, 350 feet long and 40 feet beam, and capable of 14 knots, was, until 1888, the best ship in the volunteer fleet. She was bought for £65,000, and was re-named *Rossia*. Another was the *Thuringa*, which, however, still had her original antiquated engines. She cost £50,000. The third was *Hammonia*, doing 14 knots, and bought at the same price. She was re-named *Moskwa*. Each of the three received one 8-inch gun, two 6-inch, four 4-inch, a 9-pounder, and some mitrailleuses. The magazines, placed below the water-line, contained 150 cartridges each. The coal bunkers held 1400 tons, sufficient for 9500 miles at 10 knots an hour. Two other ships, the *Vladivostock* and the *Tarostan*, were afterwards added to the fleet.

The war with England did not break out, but in 1880 a rupture with China seemed probable, and the volunteer fleet was sent out into the Pacific in 1881-82. They were then used to transport troops to Vladivostock, Okhotsk, and Petropavlosk, and later to carry convicts to Saghalien. They also loaded tea for Odessa at Han-Keon.

From 1st October, 1878, to the 1st December, 1883, the volunteer fleet earned 6,700,000 roubles, but most of that was devoted to a new steamer, and independently of that, second-hand steamers had been bought from the United States.

From 1885 we see the commercial side of the volunteer fleet develop. A managing committee was formed under the presidency of a high navy official, and on it sat representatives of the Treasury, the War Office, and the two exchanges of St. Petersburg and Moscow. The last was charged with finding cargoes for the steamers, which have been formed into a share company, established in perfect accord with the spirit of the Ukase of 1878, but without preventing the formation of other companies whose steamers may also form part of the naval reserve as auxiliary cruisers. This organization was sanctioned on 26th January, 1886, "provisionally during peace time," and a government subsidy was granted to the volunteer fleet. This was at first 15,000 roubles, but was soon raised to 17,500. The fleet then consisted of eight steamers of a total tonnage of 50,860, and 33,308 horse-power. To ensure the renewal of worn-out vessels a Ukase of 6th January, 1895, raised the subsidy to 600,000 roubles a year for ten years on condition that the volunteer company should in that time build four steamers, each of at least 8000 tons and 17 knots' speed. In the meantime the traffic of the company developed greatly. It has carried on the service between the Baltic ports and Odessa since 1891. In 1898 it had fourteen ships, none more than ten years old, having a total displacement of 128,000 tons, and a horse-power of 84,000. Small vessels like the *Kabarowsk*, of 2500 tons, are rare. The types in service are:—

1. *Kostroma*, *Tamboff*, *Nijni-Novgorod*, *Orel*, *Saratof*, and *Yaroslaw* (1888 to 1893). These are from 7900 to 8200 tons, 450 feet long, with speeds of from 14 to 18 knots.
2. *Petersburg*, *Kasan*, and *Kherson* (1893 to 1896). These are from 9000 to 10,500 tons, 490 feet long, having a speed of 19 knots.
3. *Smolensk*, *Moskwa*, *Bogatyr*, *Curagan*, and *Poltaiva* (1898 to 1901). These are 510 feet long from 11,000 to 12,000 tons, with a speed of 20 knots.

All above ships are twin-screw, except the *Kostroma*, and were built in England. There are also the transports *Ekaterinoslaw*, *Kiew*, *Voroney*, and *Vladimir* (1895 to 1896). They are 450 feet long, of 10,500 tons, and a speed of 13 knots.

Quite half the fleet was built by Hawthorn & Leslie on the Tyne.

In 1902 a line of steamers from Odessa to New York, *via* Naples, was established in conjunction with the Compagnie Italienne de Navigation. The Volunteer Company contributed the *Peterburg*, *Orel*, and *Saratof*.

The depots of the volunteer fleet are Odessa, Libau, and Vladivostock. It seems not quite certain whether the steamers always carry their guns and ammunition with them or not. The armament for the swift cruisers consists of eight quick-firing 2-inch Oboukhoff guns and eight 3-inch, while the transports have six 5-inch cunets instead of the Oboukhoffs.

Since 1896 it has been ordered that the nucleus of the crew of a volunteer ship should consist of men who have served five years in the regular navy, and who re-engage for two years for that purpose. Their pay is 20 roubles a month. Most of them are excellent gunners and steersmen. The captain and his second in command are always naval officers. The lieutenants are often merchant seamen. The ships never carry the commercial flag even in time of peace. In war time they use the navy flag, in peace time a flag special to themselves.

COMMENTS

From ***Iron Age,*** New York, Oct. 6, 1904.

The Far Eastern Review, a monthly review of the Far Eastern trade, finance and engineering, dedicated to the industrial development of trade in the Philippines and Far Eastern countries, is a new periodical published in Manila, P. I., by George Bronson Rea, an engineer and newspaper man formerly of New York. The first issue made its appearance in June, and had a number of exceedingly interesting articles. Notable among them were the following: "Approved Water System for Manila," by J. F. Case, engineer in charge; "Modern Rice Culture," by Wilbur J. Beaudeau, rice culturist, Bureau of Agriculture, Philippine Islands, and "Iron Region of Angat, Province of Bulacan, Luzon," by H. D. McCaskey, chief of Mining Bureau. The regular departments under which items of Far Eastern news interest will be collected are railroads, building news, mining review, construction and engineering news, financial review, industrial notes and markets. The publisher announces it as his purpose "To assemble together the vast amount of industrial and trade information of the East, so as to show the business opportunities in various lines, making the review of general interest and value, not only in the commercial centers of the East, but to the capitalists and manufacturers of the United States and Europe." The field is a new one and is large and important. It has never been covered before and there is every reason to anticipate success for the new publication.

From ***Cold Storage and Ice Trade Journal,*** New York, October, 1904.

The above is the title of a new monthly publication issued by George Bronson Rea, M. E., at Manila, P I., of which we have received the August issue, being No. 3 of Vol. I. It is a handsomely printed, finely illustrated and most interesting publication, devoted to a review of Far Eastern trade, finance and engineering, and dedicated to the industrial development and advancement of trade in the Philippines and Far Eastern countries. The East Indies, China and Japan are its field, and American manufacturers desirous of export trade cannot better keep in touch with the situation in those countries than by a study of its pages. We are glad to welcome so valuable and so handsome an evidence of the prosperity of the East.

From ***China Review,*** Tientsin.

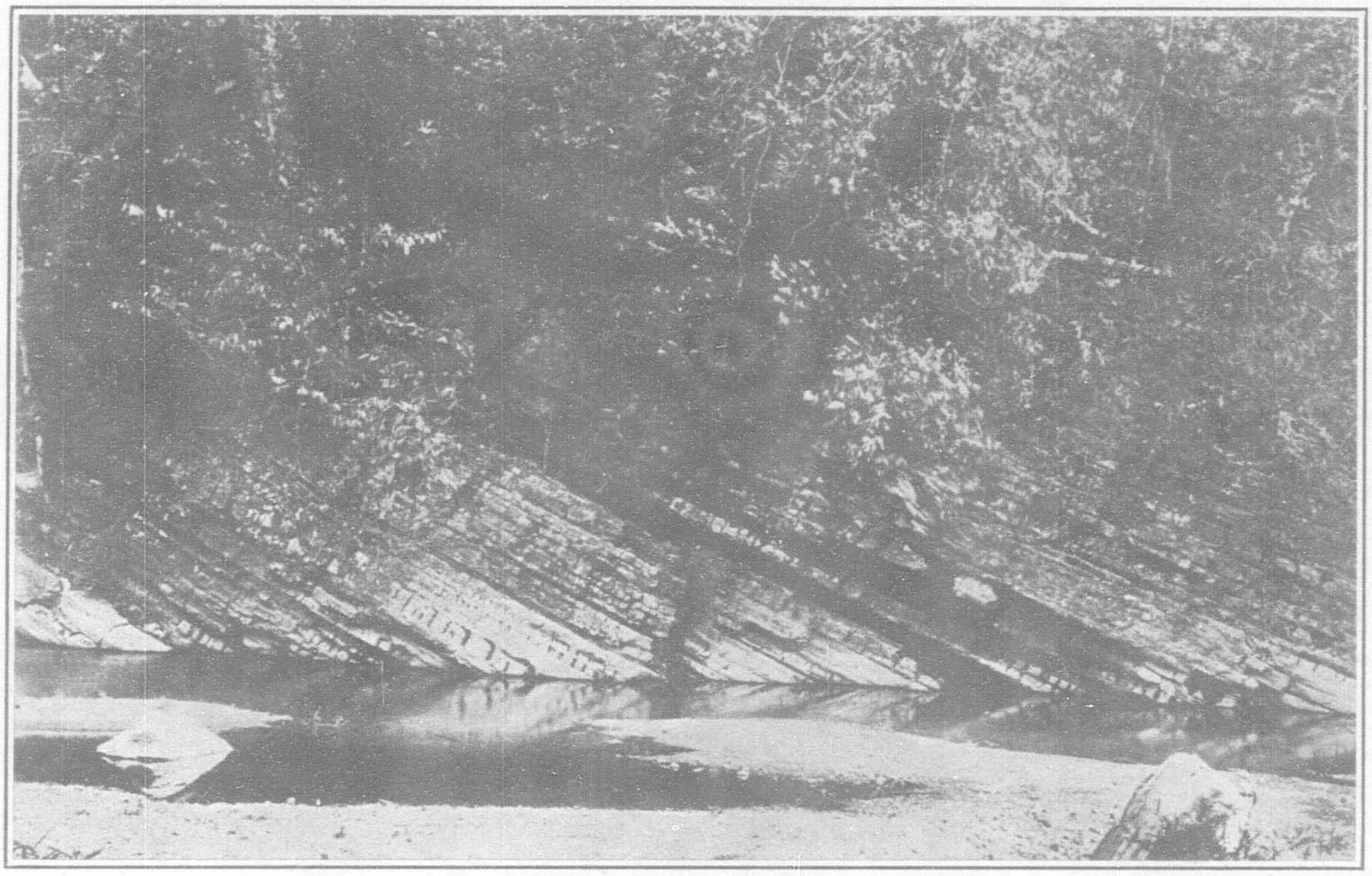
We have received by the last Manila mail a copy, No. 5, Vol. 1, of the *Far Eastern Review*, a monthly magazine of Commerce, Engineering, and Finance, published by Mr. Geo. Bronson Rea, M. E.; and we must say that its contents and get-up quite astonished us. That the American commercial centre in the Far East has such a representative and inclusive journal looking after its interests should be a matter of congratulation to every subject of the "Stars and Stripes;" but this fifty-page paper—profusely illustrated as the most important articles are—is something more than a mere representative of American interests. Its scope is almost its title, and we venture to think that, when it becomes known, no business house in the East would willingly be without it. We shall gladly add it to our exchange list and quote from it often.

From ***Shanghai Times.***

THE FAR EASTERN REVIEW.—We received a copy of the November number of this most excellent publication yesterday. It is quite equal in every respect to the previous issues and we notice some new features that will be of great interest to subscribers in Shanghai. A lot of space is devoted to engineering subjects, and full drawings and plans of the survey boat built by the Hongkong and Whangpoa Dock Co. for the Philippine Government have a prominent place. For business people or others intending visiting the Philippines there is a good-sized map outlining the railway system in the Island and locating all the projected new lines. Full descriptions and photographs of the flora and the vegetable life of America's Island possessions abound throughout the periodical.

THE CAVES AND MINERAL SPRINGS OF BULACAN

By H. D. McCASKEY, B. S., Chief of Mining Bureau, P. I.



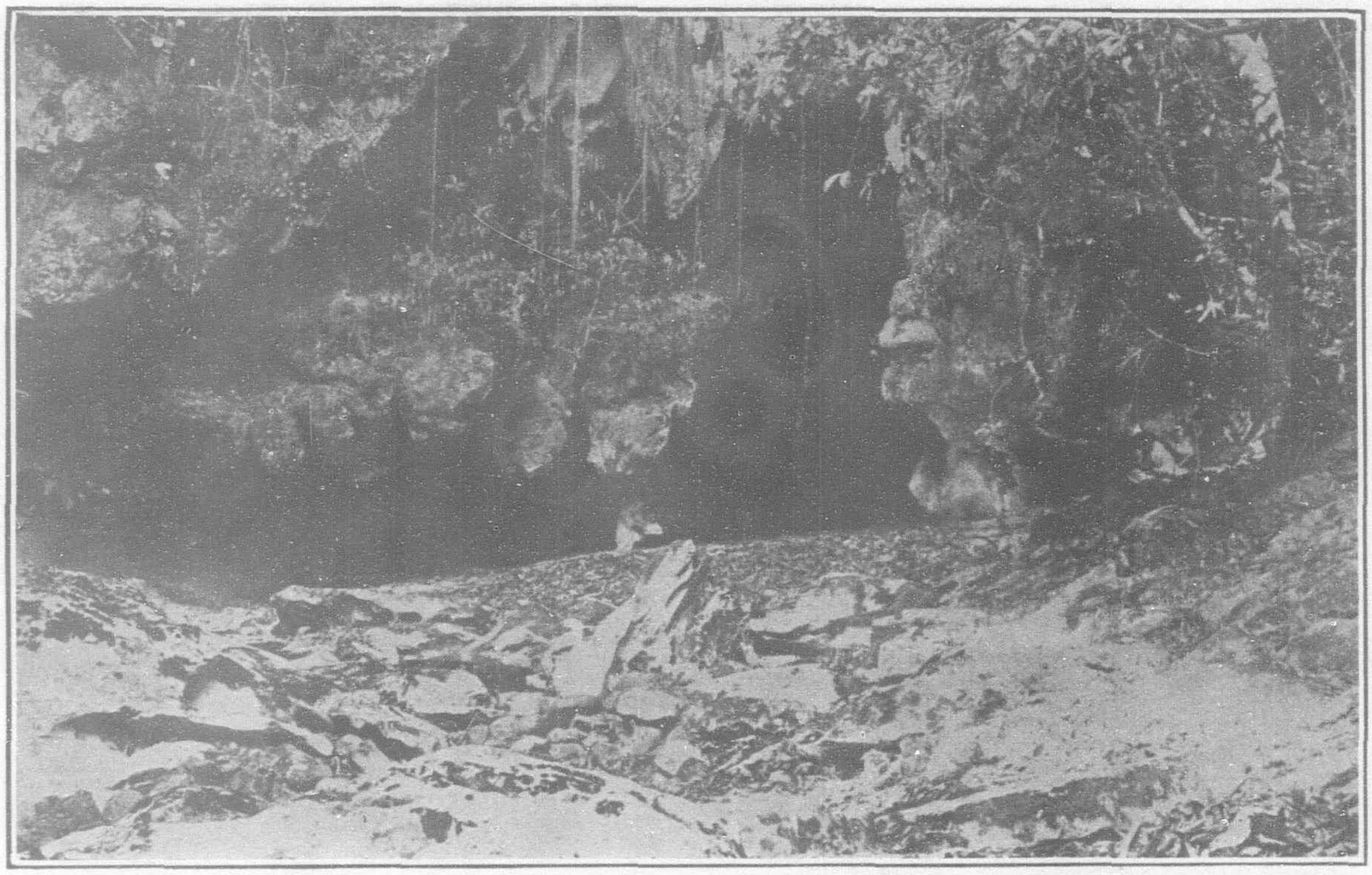
LIMESTONE BEDS. BAYABAS RIVER ABOVE SANTA MARGARITA SPRING.

The limestone caves of Bulacan deserve rather more than passing mention. They are found in the coral rock extending through the province. They are formed, it is hardly necessary to state, by the water courses which originally flowing through the fissures of the rock dissolve the calcium carbonate and so enlarge the passageway, forming immense caverns. The dripping of the impregnated waters through the overlying calcareous formation and through the roof leave by evaporation the stalactites hanging from above and frequently form stalagmites on the floor. The bottoms of the caves are usually waterways, and contain pools more or less extensive, and they are frequently streams with pebbles, sand, and mud. The tendency of the waters of the stream, if it be swift, is to dissolve and erode and so to enlarge the caverns; if it be slow, to dissolve but also to deposit sediment; and the tendency of the percolating waters is to form stalactites and stalagmites if highly impregnated with mineral matter in solution, and to increase the width of the fissures and opening if but lightly charged. Therefore, limestone caves may remain of constant dimensions, theoretically, although this accident of the equation of agencies is of course very rare; or they may be constantly or intermittently enlarging, or becoming filled, depending upon the relation between the amounts substituted or removed.

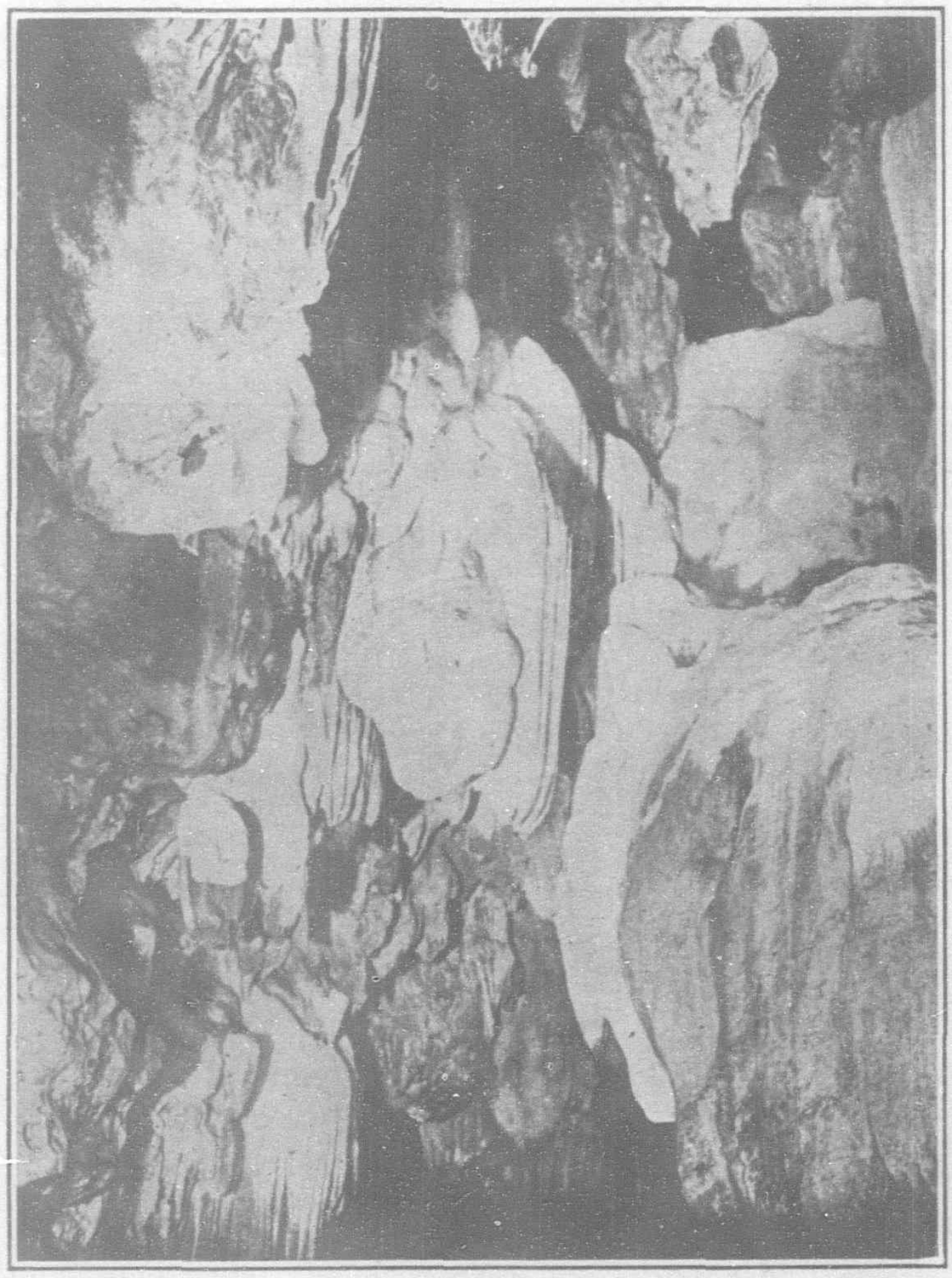
In Bulacan there are numerous caves from San José del Monte on the south to the Madlum Cave on the north. They are all of similar origin, but of varying size. The most famous of these caves is the historic Biac-na-bató, which gave its name to the Treaty of 1897 between the insurgent and Spanish forces, and which was an almost impregnable fortress, frequently sheltering large bodies of insurgent troops. The peaks of Biac-na-bató rise, rugged and prominent, from the plain of Bulacan. The cave of Madlum is shown upon the sketch map of the Sibul of San Miguel de Mayumo. There are two caves to the southeast of Norzagaray, the exact locations of which I could not learn, one of which was described to me by Lieutenant De Court, who states that it is very extensive, contains deep lakes of water, and is the home of thousands of bats which fly out in such vast swarms when disturbed that the visitor must protect his face and body from them; and the other, described by my guide, Fajardo, is also very extensive, but it is never visited by the superstitious natives who believe it to be haunted. I found time to see two of the well-known caves, one of them in Mount Tucod, on the southwest side of the Pangisijan Creek, and the other, the cave of the Punings, near the barrio of Bayabas.

The Tucod Cave, called by the natives the iglesia, or church, consisted mainly of one large room about 50 feet high, from 40 to 80 feet broad, and about 75 feet deep. It is entered from the bed of the creek through two large arched doorways and clefts run through the roof to the top of the limestone hill separated from Mount Tucod by the gorge cut by the Pangisijan. There is a tumbled mass of rock resembling an altar and great, beautifully colored stalactites, reds and greens, resembling candelabra. The floor is covered with loose sand, pebbles, and bowlders. The cave is self-ventilating in the same manner as are some mines worked by both shaft and tunnel. The cave is constantly enlarging, and from erosion and dissolution of the calcium carbonate by the rain water from above will eventually be open to the sky.

The cave of the Punings is the most interesting and extensive, probably, in the province. It is illustrated imperfectly by the photographs accompanying this article. The Sapa-Santol, or Santol Creek, rises near the Santa Lutgarda claim, flows around the base of Mount Calabaza and flowing *through* Mount Puning, changes its name to Puning Creek and discharges into the Bayabas near the barrio of Bayabas. This, like all of the mountain streams, flows through narrow valleys with extremely steep sides, and it carries little water in the dry season, but it is a rushing torrent during the rains. The formation of Mount Puning, which is almost a conical hill, is of coralliferous limestone. The stream, in ages past, found a fissure through the rock and has gradually cut for its waterway a cave over a mile long. The entrance from the Bayabas is a singularly pretty and attractive one. Leaving the Bayabas one follows the Puning Creek upstream, over distorted shales overlaid by limestones, past little cataracts, waterfalls, and deep pools, all overarched by tall trees and climbing vines; and, after following the little valley to the right, one comes into a little open space and is confronted by the side of Mount Puning, rising almost vertically for 50 or 60 feet, and here is the entrance to the cave. The stream has disappeared some distance below, and during the dry season one walks over the sand and pebbles of the creek-bed of the rains. For about 400 feet and in the direction S. 70° E. there is a great cathedral-shaped cavern, about 80 feet broad in some places and the point of the arch 150 feet high in many places. During the dry season the water runs beneath the pebbles and sand and the upper floor is almost dry. The bed inclines at a slight angle over this stream bed, the inclination being much more abrupt near the head of the main cave, where there are bowlders and great blocks of the limestone in place. This part of the cave contains many beautiful stalactites hanging from the roof and sides, some of them of greenish and reddish tints and some of them sparkling with millions of little crystals of calcium carbonate. One great stalactite, the Giant, is almost the shape of an inverted turban, and chokes the passage at the point where it hangs, about 400 feet from the mouth. At this place there is a narrow passage running to the northeast, and another, the main passage, running 24 feet to the S. 20° E. 13 feet S. 65° E., and 18 feet S. 30° E., at which point there are many bowlders, a steep incline, and a large, almost perfect basin of marble, containing clear water. The sides of the cave here are of a beautiful bluish mottled marble. The incline becomes more steep and difficult from this point, and finally, about 75 feet farther, the passage is very slippery and narrow, and here we stopped, our large supply of torches being about spent. The entire length of the cave is something over a mile, and my guide told me that men have been lost in it for two



ENTRANCE TO PUNING CAVE.



INTERIOR OF PUNING CAVE.

days. The rock floor is covered for the most part with sand, pebbles, and bowlders to the depth of many feet. I found no signs of life of any kind excepting one remarkable spider previously mentioned, and one large black frog. The only fossil observed was a portion of a madrepore coral, broken by me from the rock at the side of the cave. A fairly strong current of air sweeps through the cave in the direction of the water flow, and the coolness, dampness, darkness, and the draught of air, remind one strongly of conditions of a mine.

THE SIBUL OF SAN MIGUEL.

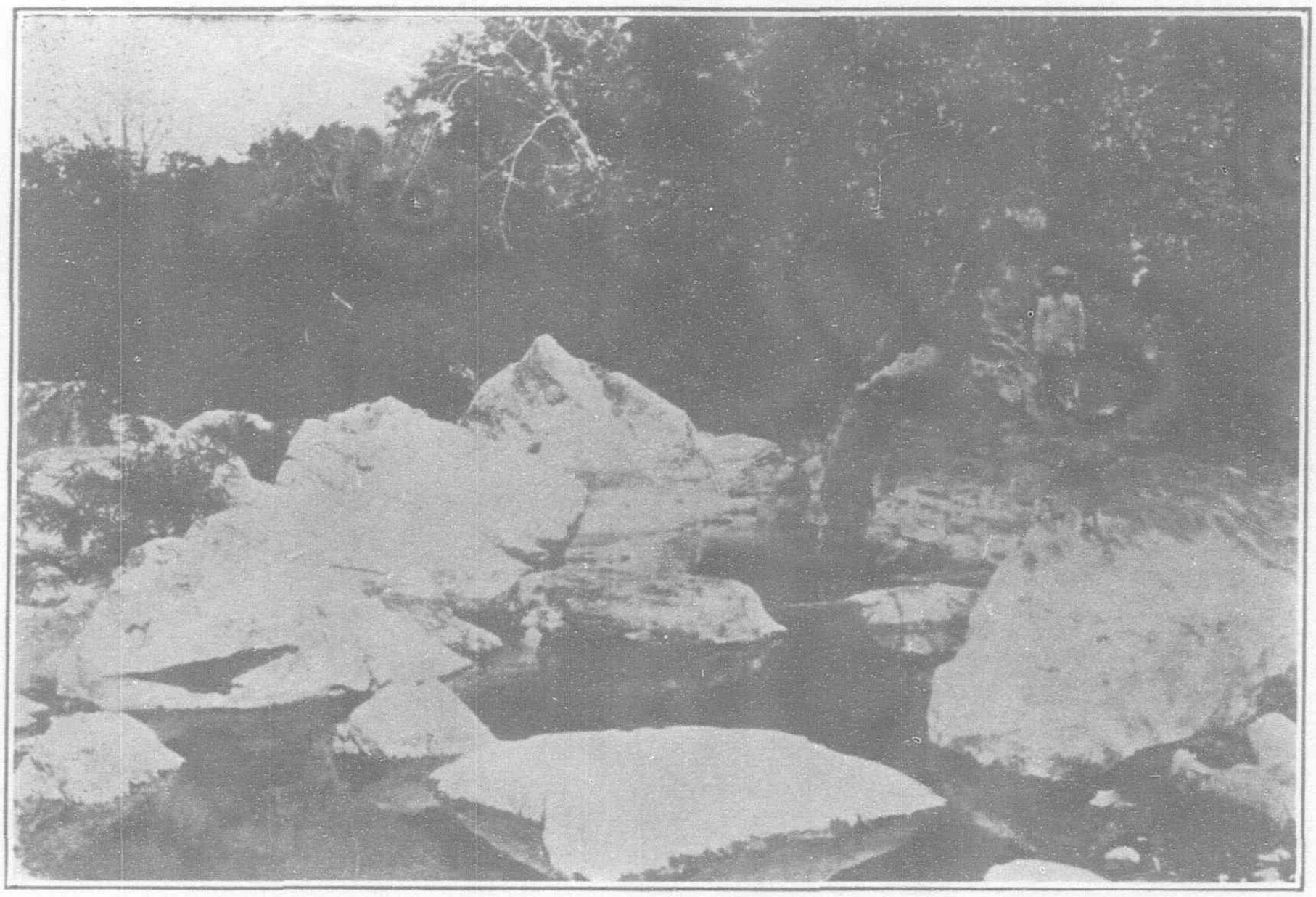
There were three springs in 1885, at the barrio of Tartaro, or Sibul, about 10 kilometers from San Miguel de Mayumo, of which one, the San José, was ferruginous, was supplied by surface waters, and therefore inconstant in flow, and has since lost its identity by having been merged with the waters of the San Rafael. The second spring, the San Matilde, is but another outlet of the waters which furnish the flow from the San Rafael.

Connected with this latter valuable and well-known spring, the Spanish Government had established baths and placed them in charge of a medical director. Patients were sent to the San Rafael baths from Manila, and the waters were famous for their curative properties.

SAN RAFAEL SPRING.

In a small ravine, to the northeast of the church of Sibul, is found the San Rafael spring, the waters of which collect in a small pool about 5½ meters in diameter. In the bottom of the pool there is a deposit of calcareous tufa as a product of sedimentation. The water gushes out profusely from a small crevice in the rock upon which this deposit occurs. There is an orifice in the east wall of the pool, a few centimeters above the surface of the San Rafael waters, which furnishes an outlet for the San José spring, and the waters of the two springs are thus mixed and flow from the San Rafael together.

The temperature has always shown the same reading and is 28^0 C.=82.4^0 F. The water is clear and transparent in small quantities, and is of a light bluish tint when observed in large volumes. The odor is strongly that of sulphuretted hydrogen, and the taste is that characteristic of the same gas. Litmus paper is unacted upon by the water, but paper



LIMESTONE BOWLDERS IN BAYABAS RIVER JUST BELOW CAMP BURRITT.

soaked in freshly prepared lead acetate is blackened both by immersion and by suspension.

The water is spontaneously gaseous and bubbles of liberated gas rise to the surface, both when the water issues from the spring and when it is contained in a bottle or in a glass.

The average flow is 73 liters per second, the constant temperature 28° C., and the mean density 0.998443.

The therapeutic uses of the San Rafael waters are recommended for *dermatosis húmedas*, ulcers, herpes, chronic gastro-intestinal catarrhs, dyspepsia, chronic dysentery, hepatic tumors, and menstrual disorders. The waters should not be used by those having affections of the heart, or the gout.

The waters should be used in the bath, and doses of from two to four glasses daily may be taken internally.

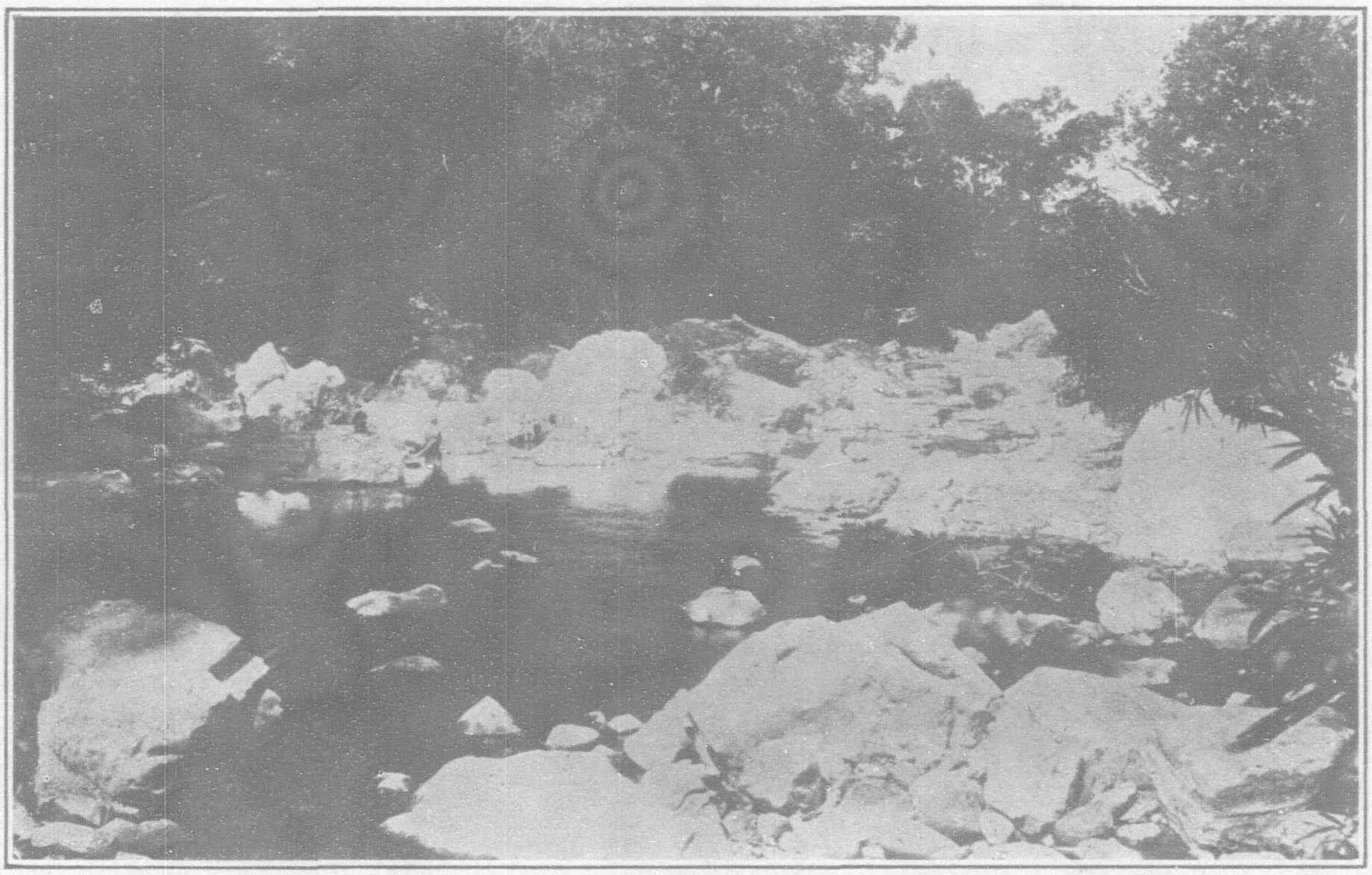
The San Rafael season is from November to May, when the waters are normal and when the climatic conditions are most salubrious and conducive to the rapid convalescence of the invalids.

SAN MATILDE SPRING.

About a kilometer to the north of the preceding, and flowing into a pool excavated in the plain, the San Matilde spring is found. Upon leaving their basins the waters of both the San Rafael and the San Matilde springs flow into the Rio Chico. There is an abundant escape of gases as shown by the bubbles rising to the surface.

The water is clear and transparent in small quantities and is slightly opaline and of a bluish tint when viewed in the mass. It is sulphydric in odor and taste, of an acid reaction so slight as to be almost imperceptible, and is of minute variation in temperature.

When used in the bath it produces a general excitation more or less intense and increases the activity of the reflex power of the nervous system. Taken internally it occasions a stimulation in the gastro-intestinal apparatus, related in intensity with the state of irritability of the organs. In small doses it augments the contractive force of the muscular tunic of the stomach, stimulating the circulation and mate-

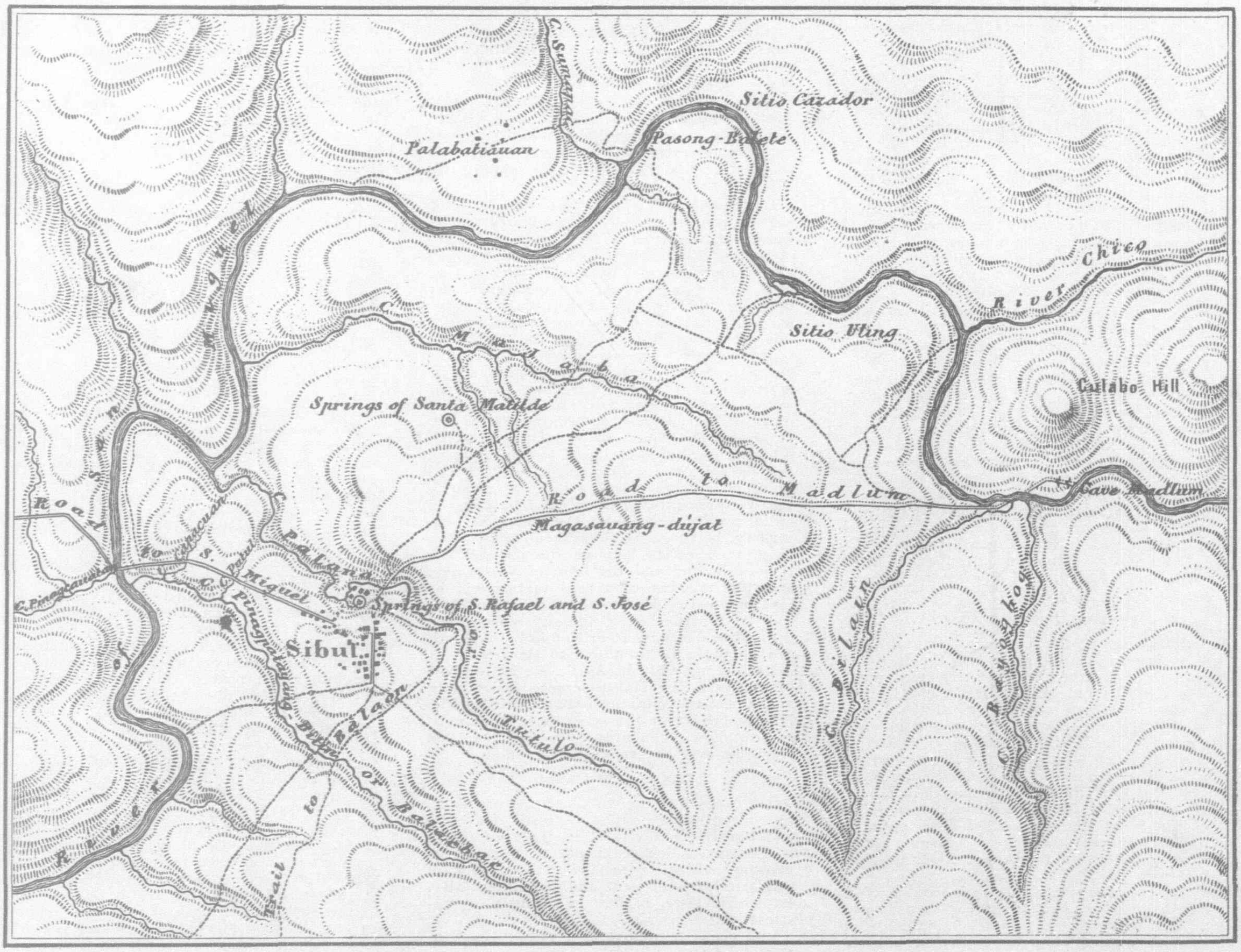


LIMESTONE ROCKS IN PART IN PLACE. BAYABAS RIVER.

THE SPRINGS AT
SIBUL
SAN MIGUEL DE MAYUMO

SKETCH BY D'ALMONTE

REPRODUCED BY THE MINING BUREAU
MANILA, P.I., 1902



rially modifying the digestive functions, facilitating the complete absorption of substances that can be assimilated.

The oxidation and temperature are therefore augmented, the circulation is more active, and the breathing more ample.

In doses of 200 grammes, repeated several times during the day, the excitation of the stomach is more intense, and a great part of the water passes to the intestines, where it produces an exosmotic current, awakens the contraction of the muscular tunic, and originates evacuations of a dark color in which dominate the coloring elements of the bile, the mucus, and the cellular detritus.

If the doses exceed 500 grammes, as they do in the case of almost every invalid at Sibul to whom they are administered, the dialytic action is mechanical, and the evacuations are preceded by a sensation of very oppressive burden and great pain.

These waters of the San Matilde spring are recommended for cases of *dermatosis húmedas*, chronic catarrh of the digestive tube, dyspepsia not related with alterations of the texture of the organ nor with a general morbid state, tumors of the liver and of the spleen, neuralgia provoked by hysteria, leucorrhœa, menstrual hemorrhage, and chronic parenchymous inflations of the matrix sustained by the herpetic constitution, or by anæmia.

The waters are useful in cases of chronic dysentery when the disease has not progressed too far and the alterations of the mucous intestinal texture are not considerable; and they are particularly useful, like those of the San Rafael spring, in dysentery originated by circulatory overthrow of the vena portæ and when this infirmity is shown in persons subjected to the influence of herpes.

The waters should be used in baths of short duration and in carefully graduated internal doses not exceeding 400 grammes; and the season for treatment is from November to March.

THE SAN JOSE SPRING.

This spring, as before stated, is of small volume and its waters flow into those of the San Rafael. The supply being from the surface, the flow is more or less uncertain.

The water is colorless, with a slight sediment, without odor, and of slight perceptible taste of ink. It is without the evolution of spontaneous gases and is of neutral reaction.

The use of these waters is recommended for chlorosis, anæmia, dyspepsia, gastralgia, and for other disorders of the digestive tube, for leucorrhœa, and for all states of convalescence characterized by general debility.

The waters are not advised for gastro-intestinal disorders with organic lesion.

The dose recommended is from one to three small cups a day, and the season is from November to May.

THE SIBUL OF NORZAGARAY.

Upon crossing the Angat or Quingua River at Norzagaray, passing through the barrio of Matictic and traversing a fairly good road, over foothills and valleys for about 2½ miles to the northeast, one arrives at the banks of the Mabato arroyo. Here the road ends abruptly, and its continuation is a narrow footpath, that follows up the stream bed for a short distance and then makes northeast over the hills to the little mountain village of Balite. The Mabato rises to the southeast of the Bocol limestone hills, flows past the southern hill of this range and turning southwest empties into the Angat River at Norzagaray.

On the south side of the creek about 300 feet below the road there is a little cup-shaped basin 3 feet in diameter and 3 feet deep, at the base of the hill, in which I found in April some mineral water almost stagnant from the small volume of supply, bluish in color when clear, with a heavy, black, muddy sediment, and with strong odor of sulphuretted hydrogen. This was called by the Spanish the Dilain spring. About 350 feet above this spring, just beyond the terminus of the road and on the north side of the Mabato, a small stream of clear water comes through a fissure in the limestone of which the Bocol hills are constituted, and discharges into a basin cut in the rock, the outlet of which is a channel a few feet long. Through this channel the waters discharge into the Mabato only a foot or two below the level of the spring. This is the spring called by the commission on mineral springs, of 1885, the San Mariano spring, in an attempt to avoid the confusion from the use of the Tagalo word *Sibul*, which means *spring*, and which the natives use for both these waters, near Norzagaray, and for those near San Miguel de Mayumo.

When I visited this place in April, 1902, I found no buildings of any kind, although I was told that an American prospector had located and staked out this spring, constructed a small nipa house in the vicinity and was living there. I found the remnants of a bathing tank of rough masonry at the Dilain spring, and parts of a tile pipe line, and some slight masonry arching to strengthen the opening, at the San Mariano. The natives said that ten years before my visit, or in 1892, the sitio of Sibul consisted of 18 or 20 houses. The people of Angat, who sent to these springs for the waters, were willing to pay a medio peso for a quart bottle, as great faith has been entertained for years in the curative powers of the waters. I was also informed that the Spanish Government some years ago had planned rather an extensive sanitarium here, but that for some reason or another it had not been constructed.

My brief observations would suggest that this or any other available part of the hill country of Bulacan would be suitable for more rapid convalescence than might be possible in Manila or in the lowlying plains and fields adjacent to the bay.

During the midst of the hot season I found the air refreshing and comparatively cool in the shade, the water of the mountain streams clear and sweet and uncontaminated, apparently salubrious and healthful. At night we were quite comfortable under blankets; every morning cool, bracing mountain breezes blew; and out of the direct rays of the sun the air was refreshing even through the middle of the day. We were not annoyed at any time during our six weeks in the hill country by mosquitoes. It would seem that should the waters of either the Sibul of Norzagaray or those of San Miguel be considered as valuable by the American physicians and government as they were held by our Spanish predecessors, sanitariums might be established at or near these places with great profit to the convalescents. The baths of Bulacan are quite readily accessible, the one near Norzagaray being particularly so. A fair carriage road exists between the railroad station of Bocaue and the town of Norzagaray, and the remains of a road that should be readily repaired lead to the Sibul. The river can be forded during the dry season, and the entire distance, from Manila to the Sibul, can be made in from five to six hours.

During my visit in April, the hottest part of the year, the Mabato creek was running and the San Mariano spring flowing. The Dilain spring, on the other hand, was almost without flow, the outlet from the basin just trickling over the sands to the creek.

THE DILAIN SPRING.

The waters of the Dilain spring are clear, transparent and colorless in small quantities and bluish when viewed in the mass. There is a heavy, black sediment, partly in suspension, which, with the strong odor of sulphuretted hydrogen, and the bitter, salty, sulphydric taste, render the spring most unattractive.

The water is slightly acid and effervescent. It is useful, both in the bath and internally, for herpetic affections, scrofula, in all its manifestations, infirmities of the urinary passages, articular tumors, and catarrhal affections of the matrix.

THE SAN MARIANO SPRING.

This spring flows through a crevice in the semicrystalline limestone rock on the north side of the Mabato, within 6 feet of the edge of the water in the dry season, and the waters collect in a small basin in the rock not more than a foot above the level of the creek. It will readily be seen, therefore, that when the annual rains begin, and the waters of the mountain stream rise, the spring will flow into the creek below surface level, and its identity will be lost. Through two other small fissures of the limestone strata, at the contact with the water, very small streams flow into the Mabato. In each of the cases the water coming through the rock, upon mixing with the waters of the creek, leaves a fine white precipitate. This calcareous precipitate is also found in less degree in the small basin from which the waters of San Mariano find their outlet.

A careful test with a standard thermometer of the temperature of the San Mariano spring, gave me, on April 1, 1902, a reading of 77° F., which corresponds to 25° C. The Spanish commission in February of 1885 found a temperature of 26.5° C. with the atmosphere at 26° C.

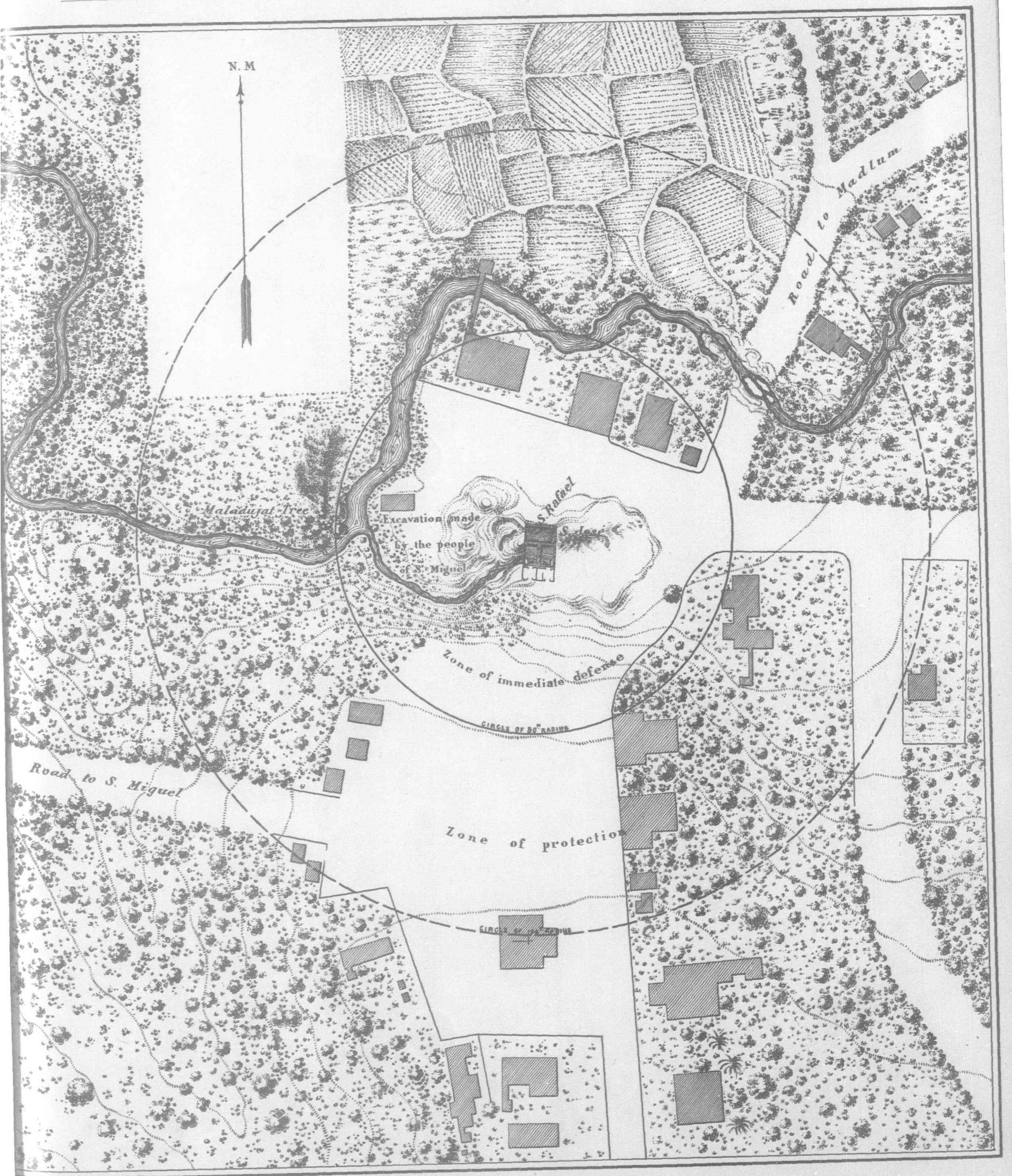
The San Mariano waters are clear, transparent, and colorless in small quantities, and bluish in the mass. The odor and taste are those of sulphuretted hydrogen, the reaction is neutral, and the water is noneffervescent.

The waters are recommended in the bath and to be taken internally for cases of chronic gastro-intestinal catarrh, dyspepsia, tumors of the liver, in menstrual disorders, in herpetic manifestations, and in *dermatosis*.

The season for the use of the San Mariano and the Dilain springs is from November to May.

SILVER AND COPPER MINES IN INDO-CHINA

We understand on good authority that another syndicate is being formed in Hongkong, this time to re-open and work the old abandoned copper mines in the hills of Indo-China some 300 miles inland. These have now been closed for the past fifteen years owing to the disturbed condition of the country; but fortunately, the shafts, some score or so, averaging 50 feet deep, have never been interfered with. In fact, they are said to be in first class condition for working with but little initial expense. Old assays on record showed that the output panned out 35 per cent copper, 0.600 silver, with traces of gold, though there was but little iron or sulphur. During the time that the Chinese worked on these mines the ore was not crushed or smelted, being carried to the coast ports to evade the piratical raids of marauding bands which used to roam about the country and infest certain localities in the hill. These men were constantly recruited by robbers and fugitives and interrupted the Chinese miners to such an extent that they finally abandoned the mines altogether. Of late years, however, the country has become more settled. The country all around is hilly though the hills are not steep, the highest towering barely 3,000 feet above the level of the sea. The slopes are thickly wooded, while for some months annually, during the rainy season, a navigable river runs close past the locality where these mines are situated, thus affording further facilities for transportation of supplies and necessaries, whilst the easiness and cheapness with which draught animals are procurable afford a constant connection with the coast ports. Now that the pirates have practically disappeared from these regions the natives are peaceful and willing workers, engaged chiefly in tilling and cultivating the land. Owing to the rocky substratum at a depth of about 40 feet, blasting operations are necessary to secure the ore, and we understand that the results of the prospecting lately done have been so successful, that it is on the *tapis* that operations will not be long delayed after the concessions have been secured. On account of so many shafts having been sunk and remaining practically in good working order, not so large a capital will be necessary to start these operations, as of course the initial expenses will be so much the lighter.—*Hongkong Telegraph*.



MINERAL SPRINGS OF S. RAFAEL AND S. JOSE, SIBUL, SAN MIGUEL DE MAYUMO, BULACAN.

FAR EASTERN STOCKS AND QUOTATIONS

COURTESY OF BENJAMIN, KELLY & POTTS, SHAREBROKERS, HONGKONG-MANILA, 2nd December, 1904.

STOCKS	WHEN ESTAB-LISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	Approximate Return at Present Quotation* PER CENT	CLOSING QUOTATIONS
Banks.												
Hongkong and Shanghai Banking Corporation	1865	$10,000,000	80,000	$125	$125	*g* £1,000,000; *s* $7,000,000; *i* $250,000	... $1,492,554	30-6-04	£1.10s. @ exchange 1s. 9 15-16 =$16.41 for first half-year 1904	22-8-04	5¼	$710 buyers; London £70
National Bank of China, Limited	1891	£699,475	99,925	£7	£7	$175,533; *c* $191,973	.....$21,668	31-12-03	$2 (London 3s. 6) for 1903	1-2-04	5¼	$39
Marine Insurances.												
Canton Insurance Office, Limited	1881	$2,500,000	10,000	$250	$50	$1,400,000; *j* $81,739	..... $150,494	31-12-03	$17 for 1903	22-10-04	6¾	$250
China Traders' Insurance Co., Ld.	1865	$2,000,000	24,000	$83.33	$25	$900,000; *f* $151,992; *j* $331,342; *u* $322,138	..... Nil.	30-4-03	$4 for year ended 30-4-1903	9-12-03	6¾	$63½ sellers
North China Insurance Co., Ld.	1863	£150,000	10,000	£15	£5	T800,000	.....T217,119	30-6-04	Final of 10s. making £1 for 1903	26-10-04	7½	T100 sales
Union Insurance Society of Canton, Limited	1867	$2,500,000	10,000	$250	$100	*s* $1,850,000; *g* £20,000; *f* $372,749; *j* $893,110; *u* $846,773	.....$2,078,997	30-6 04	$35 for 1903	21-10- 4	5	$685 buyers
Yangtsze Insurance Association, Ld.	1862	$800,000	8,000	$100	$60	$700,000; *f* $37,794	..... $432,475	31-12-03	$12 for 1902	22-4-04	8	$150
Fire Insurances.												
China Fire Insurance Co., Ld.	1870	$2,000,000	20,000	$100	$20	$1,000,000; *x* $125,675; *f* $2,561	..... $329,047	31-12-03	$6 dividend and $1 bonus for 1902	11-3-04	8	$90 buyers
Hongkong Fire Insurance Co., Ld.	1868	$2,000,000	8,000	$250	$50	$1,170,288	..... $371,110	31-12-03	$22½ for 1902	7-3-04	6¾	$335 buyers
Shipping, Tug and Cargo Boats.												
China and Manila Steamship Co., Ld.	1882	$750,000	(*1*) 30,000	$50	$25	none	*Dr.* $63,123	31-12-03	$5 for 1900	25-3-01	—	$24
Douglas Steamship Co., Ld.	1883	$1,000,000	20,000	$25	$25	$185,000; *i* $85,439	..... Nil.	30-6-04	$2 for year ended 30-6-1904	29-9-04	6	$34 buyers
Hongkong, Canton and Macao Steamboat Company, Ld.	1865	1,200,000	80,000	$15	$15	*e* $250,000; *d* $600,000; *f* $157,555	.....$16,362	30-6-04	$1½ for first half-year 1904	17-8-04	10¼	$29½ sellers
Indo-China Steam Navigation Company, Ld.	1882	£1,200,000	(*2*) 60,000	£10	£10	£100,000; *i* £205,000	..... £5,853	31-12-03	10s. @ 1s. 10 5-16=$5.37.82 for 1903	13-7-04	4½	$129 buyers
Shanghai Tug and Lighter Co., Ld.	1903	T1,500,000	200,000	T50	T50	none	..... T55,541	31-12-03	Interim of T2 for 1904	13-8-04	8½	T53 sales
Do. do. Preference			100,000								8	T48½ sales
"Shell" Transport & Trading Co., Ld.	1898	£2,000,000	2,000,000	£1	£1	£400,000	..... £19,555	31-12-02	Interim of 1s. (Coupon No. 4) for '03	29-1-04	4¼	24s. sales
"Star" Ferry Co., Ld.	1898	$200,000	10,000	$10	$10	$60,000	..... $1,287	30-4-04	$1 80, Div. 40 cts. bonus for year ending 30-4-04.	2-6-04	5½	$40
	1900		10,000	$10	$5	*i* $15,093			$0.90, " 20 " "		3½	$30
Straits Steamship Co., Ld.	1890	$500,000	(*3*) 5,000	$100	$100	$400,000; *e* $21,075; *r* $18,000; *i* $130,153	.... $33,648	31-12-03	$5 for 2nd ½ year, making $13 for '03	21-4-04	8½	$150 sellers
Taku Tug and Lighter Co., Ld.	—	T. T1,500,000	30,000	T. T50	T. T50	T98,000; *d* T201,614	..... T865	31-12-03	Interim of T1½ for 1904	20-7-04	10	T30 se ers
Refineries.												
China Sugar Refining Company, Ld.	1878	$2,000,000	20,000	$100	$100	none	*Dr.* $147,717	31-12-03	Interim of $5 for 1904	29-8-04	—	$236 buyers
Luzon Sugar Refining Company, Ld.	1882	$700,000	7,000	$100	$100	none	*Dr.* $73,905	31-12-03	$3 for 1897	24-3-98	—	$8 b uyers
Perak Sugar Cultivation Co., Ld.	—	T350,000	7,000	T50	T50	T100,000	..... T1,456	30-9-03	T2½ for year ending 30-9-03	17-12-03	4¼	T60
Mining.												
Chinese Engin'ring and Mining Co., Ld.	1901	£1,000,000	1,000,000	£1	£1	*q* £40,000	..... £7,820	29-2-04	No. 3 of 1s 6d.	15-9-04	—	T6¾ sellers
Oriental Consolidated Mining Co., Ld.	1901	G.$5,000,000	*z* 500,000	G. $10	G. $10	none	G. $672,093	31-12-03	Interim of 50 cents account 1904	30-6 04	6½	G. $16 buyers
Raub Australian Gold Mining Co., Ld.	1892	£200,000	150,000	£1	18/10	£4,873	*Dr.* £4,029	31-3-04	No. 12 of 1s.=48 cents	28-1-01	—	$5 buyers
			50,000	£1	£1							
Société Francaise des Charbonnages du Tonkin	1888	F.4,000,000	16,000	F.250	F.250	*l* F.307,740; *a* F.1,529,652	..... F.87,333	31-12-03	Final of F.25, making F. 50 for 1903.	1-9-04	—	$490

STOCKS	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	Approximate Return at Present Quotation*	CLOSING QUOTATIONS
											PER CENT	
Docks, Wharves and Godowns.												
Geo. Fenwick and Co., Ld.	1889	$150,000	6,000	$25	$25	$70,000	$10,517	31-12-03	$3.75 for 1903	11-3-04	8	$45 sellers
Hongkong and Kowloon Wharf and Godown Co., Ld.	1886	$1,500,000	30,000	$50	$50	*q* $50,989; $250,000	$28,015	31-12-03	Interim of $2½ for '04	31-8-04	4½	$115 sellers
Hongkong & Whampoa Dock Co., Ld.	1901	$2,500,000	50,000	$50	$50	*i* $25,500	$505,471	30-6-04	$6 div. & $2 bonus for 1st ½ year '04	23-8-04	7¼	$219 sellers
Howarth Erskine, Ld.	1901	$1,200,000	12,000	$100	$100	$60,000	—	30-6-03	$10 div. & $5 bonus for the year	8 03	7½	$202½ buyers
New Amoy Dock Co., Ld.	1892	$40,500	6,000	$6¾	$6¾	$55,500	$489	31-12-03	$1¼ for '03	5-5-04	4¼	$27 sellers
Riley Hargreaves & Co., Ld.	1899	$875,000	6,000	$100	$100	$150,000	$40,936	31-12 03	$10 div. and $2½ bonus for '03	7-3-04	6¼	$192½ buyers
Do. (Preference)			2,750						$7 dividend		6¼	$112
S. C. Farnham, Boyd & Co., Ld.	1901	T5,520,000	55,200	T100	T100	T900,000	T48,153	30-4-04	Final of T7 making T12 for year ending 30-4-04	20-7-04	6¾	T175
Shanghai and Hongkew Wharf Co.	1902	T2,000,000	20,000	T100	T100	*b* T487,210	T22,895	31-12-03	Interim of T4 for '04	23-8 04	7½	T135 sales
	1904	T1,200,000	12,000			*r* T50,913			First year			T132½ sales
Tanjong Pagar Dock Co., Ld.	1864	$3,700,000	37,000	$100	$100	$1,950,000	$43,732	31-12-03	$6 for second half year '03	23-3-04	5	$240 sales
Yangtsze Wharf and Godown Co., Ld.	1902	T250,000	2,500	T100	T100	*r* T6,000	T1,760	31-12-03	T18 for '03	31-3-04	9½	T190 sales
Lands, Hotels and Buildings.												
Astor House Hotel Co., Ld. (Shanghai)	1901	$750,000	(4) 30,000	$25	$25	none	$9,989	30-6-04	$2½ for year ending 30-6-04	30-8-04	8¾	$29 sales
Astor House Hotel, Ld. (Tientsin)	—	T. T100,000	2,000	T. T50	T. T50	T41,000	T655	29-2-04	Interim of T4	29-10-04	6	T150 sellers
China Land and Finance Co., Ld.	1903	T300,000	6,000	T50	T50	—	—	First year	Interim of T2	1-10-03	—	T55
Hongkong Hotel Co., Ld.	1866	$600,000	12,000	$50	$50	$100,000; *r* $11,824; *m* $20,000	$11,668	30-6-04	$5 for first half-year for '04	29-8-04	8	$140 buyers
Hongkong Land Investment and Agency Co., Ld.	1889	$5,000,000	50,000	$100	$100	*e* $500,000	$51,966	31-12-03	Interim of $6 for '04	27-7-04	8	$148
Hotel des Colonies Co., Ld. (Shanghai)	1902	T225,000	9,000	T25	T25	*n* T13,986	T680	31 3-04	To.87½ for the year ending 31-3-04.	28-5-04	4½	T19 buyers
Humphreys' Estate & Finance Co., Ld.	1887	$1,500,000	150,000	$10	$10	*i* $200,607; *e* $50,000	$9,177	31-12-03	90 cents for '03	11-2-04	7	$13
Kowloon Land and Building Co., Ld.	1889	$300,000	6,000	$50	$30	none	$636	31-12-03	$2.60 for '03	21-1-04	6½	$39 sellers
Shanghai Land Investment Co., Ld.	1901	T2,600,000	52,000	T50	T50	T800,000; *e* T150,800; *x* T17,114	T37,634	31-12-03	Interim of T3 for '04	18-7-04	7	T117
Tientsin Hotel des Colonies, Ld.	1903	T70,000	1,400	T50	T50	none	*Dr.* T2,123	30-4-04	Interim of T3½	23-9-03	—	T50 sales
Tientsin Land Investment Co., Ld.	1902	T772,600	7,726	T100	T100	*i* T54,626	T325	31-12-03	Interim of T3 for 1904	25-7-04	7	T125 sellers
Wei-hai-wei Land and Building Co., Ld.	1899	T91,850	3,764	T25	T25	none	*Dr.* T5,150	31-12-03	None	—	—	T12 buyers
West Point Building Co., Ld.	1889	$625,000	12,500	$50	$50	none	$1,362	31-12 03	Interim of $1½ for '04	27-7-04	5	$60 sellers
Cotton Mills.												
Ewo Cotton Spinning and Weaving Co., Ld.	1895	T750,000	15,000	T50	T50	none	T11,655	31-10-03	T4 for year ended 31-10-03	22-12-03	16	T25 buyers
Hongkong Cotton Spinning, Weaving and Dyeing Co., Ld.	1901	$1,250,000	125,000	$10	$10	none	$22,862	31-7-04	50 cents for year ended 31-7-04	12-9-04	4¼	$12 buyers
International Cotton Manufacturing Co., Ld.	1895	T750,000	(5) 10,000	T75	T75	*n* T30,098	T88,034	30-9-03	Interim of 3 per cent account 1898	30-4-1898	—	T20½ buyers
Laou-kung-mow Cotton Spinning & Weaving Co., Ld.	1895	T800,000	(6) 8,000	T100	T100	none	T15,500	31-12-03	Interim of 4% a/c 1898 on 6,000 shares	1-8-1898	—	T32½ sellers
Soy Chee Cotton Spinning Co., Ld.	1895	T1,000,000	2,000	T500	T500	*l* T5,658	T26,389	31-12-03	4 % for 1897	2-2-1898	—	T150
Cigar and Tobacco Cos.												
Alhambra, Limited	1898	$60,000	300	$200	$200	none	$799	30 6-04	$125 for year ending 30-6-1900	15-8-01	—	$100
Philippine Company, Limited	1904	$675,000	67,500	$10	$10	—	—	—	First year	—	—	$9½
Shanghai-Sumatra Tobacco Co., Ld.	1902	T600,000	(7) 30,000	T20	T20	T24,820; *v* T25,000	T1,091	31-10-03	Interim of T3 per share	31-8-04	9¼	T65½ sales
Miscellaneous.												
A. S. Watson & Co., Ld.	1886	$900,000	90,000	$10	$10	$250,000; *e* $25,000	$2,883	31-12-03	Interim of 50 cents for '04	25-11-04	8	$12½
Bell's Asbestos Eastern Agency, Ld.	1895	£5,377 10s	8,604	12s. 6	12s. 6	none	£161	31-12-03	6d. per share for '03	21-7-04	5¾	$5
Campbell, Moore & Co., Ld.	1886	$12,000	1,200	$10	$10	$3,500	$596	31-12-03	$3 for 1903	2-4-04	7½	$40 buyers
Central Stores, Ld.	—	$91,845	6,000	$15	$12	$20,000	$1,253	31-12-03	Interim of $1.20 for '04	20-7-04	11¾	$22 sellers
Do. (Founders')			123						None	—	—	$100
Do. (New Issue)	1904	$360,000	24,000	$15	$7½	—	First	year	Preferential of 7% for '04	20-7-04	6½	$8 sellers
China-Borneo Co., Ld.	1903	$720,000	(8) 60,000	$12	$12	none	Nil.	31-12-03	60 cents for 1903	21-3-04	4¾	$13 buyers
China Flour Mill Co., Ld.	—	T200,000	4,000	T50	T50	T25,000	T1,942	31-12-03	T6 for 1903	23-3-04	8	T75 buyers
China Light and Power Co., Ld.	1901	$300,000	30,000	$10	$10	none	$3,739	29-2-04	None	—	—	$10 sales
China Provident Loan and Mortgage Co., Ld.	1898	*p* $1,000,000	100,000	$10	$10	$55,000	$1,171	31-12-03	80 cents for 1903	18-1-04	8½	$9¾ buyers
Dairy Farm Company, Ld.	1896	$187,500	25,000	$7½	$6	—	—	31-7-04	$1¼ for year ending 31-7-03	20-11-03	—	$12 sales

STOCKS	WHEN ESTABLISHED	CAPITAL	NO. OF SHARES	VALUE	PAID UP	RESERVE	AT WORKING ACCOUNT	DATE	LAST DIVIDEND	WHEN PAID	Approximate Return at Present Quotation*	CLOSING QUOTATIONS
Miscellaneous.—Continued											PER CENT	
E. L. Mondon, Ld.	1902	T350,000	7,000	T50	T50	none	*Dr.* T152,318	31-12-03	T5 for 1902	2-5-03	—	T40 sellers
Fraser & Neave, Ld.	1898	$225,000	4,500	$50	$50	$169,116	.....$2,706	31-12-03	$5 dividend and $2½ bonus for '03..	26-3-04	7½	$100
Green Island Cement Co., Ld	1889	$1,000,000	100,000	$10	$10	$350,000	.....$32,115	31-12-03	$1½ for 1903	7-4-04	4¾	$32
Hall & Holtz, Ld.	—	$420,000	(9) 21,000	$20	$20	$186,000	.....$13,104	29-2-04	Interim of $1	28-11-04	11½	$30 ex div.
Hongkong and China Gas Co., Ld.	1864	£70,000	7,000	£10	£10	f £23,109 / £3,000	..... £7,625	31-12-03	Final of 6 per cent and bonus of 1 per cent making 22s. for '03...	25-5-04	7½	$160 buyers
Hongkong Electric Co., Ld.	1889 / 1899	$600,000	30,000 / 30,000	$10 / $10	$10 / $5	none	.....$1,747	30-4-04	$1 / 50 cents for year ending 30-4-04	18-7-04	6¾ / 5½	$15 buyers / $9 buyers
Hongkong High-Level Tramways Co., Ld.	1887	$125,000	1,250	$100	$100	$30,000	.....$4,283	30-11-03	$20 for year ending 30-11-03	24-12-03	6¾	$300
Hongkong Ice Company, Ld.	1881	$125,000	5,000	$25	$25	k $35,000	.....$5,844	31-12-03	Interim of $4 for 1904	2-8-04	7¼	$255
H'kong Rope Manufacturing Co., Ld.	1883	$500,000	10,000	$50	$50	$50,000	.....$8,395	31-12-03	$10 for 1903	8-2-04	7¼	$142 buyers
Hongkong Steam Waterboat Co., Ld.	1900	$150,000	15,000	$10	$10	$2,500	..... $299	30-9-04	Final of 70 cents and 50 cents bonus, making $1.90 for the yeat	26-11-04	9½	$20 ex div.
Katz Brothers, Ld.	1896	$1,000,000	10,000	$100	$100	$375,000	—	31-12-03	$13 for 1903	...-3-04	9¾	$135 buyers
Lane, Crawford & Co., Ld. (Shanghai).	1903	$250,000	2,500	$100	$100	none	.....$21,582	29-2-04	Interim of $5	19-11-04	9	$135 buyers
Maatschappij tot Mijn-, Bosch- en Landbouwexploitatie in Langkat	1902	G.2,500,000	25,000	G.100	G.100	i T334,669 / T11,143	.....T27,187	31-10-03	Third quarterly dividend of T10 making so far T30 account 04.	15-9-04	12½	T292½ sales
Maynard & Co., Ld	1901	$34,000	3,400	$10	$10	none	..... $803	31-12-03	$2 for year ended 31-10-03	...-1-04	7¼	$27 buyers
S. Moutrie & Company, Limited	1899	$200 000	4,000	$50	$50	$5,000	..... $832	30-6-04	Final of $3 making $5 for year end. 30 6-04	28-9-04	9	$55 sellers
Shanghai and Hongkong Dyeing and Cleaning Co., Ld.	1903	$60,000	1,200	$50	$50	—	—	—	First year	—	—	$50
Shanghai Gas Co., Ld.	1903	T800,000	16,000	T50	T50	q T125,000 / T108,172	.....T7,548	31-12-03	Interim of T3½ for '04	29-7-04	8	T104½ sales
Shanghai Horse Bazaar Co., Ld.	1904	T270,000	5,400	T50	T50	T45,000	.....T10,247	31-12-03	T5 for 1903	8-4-04	5½	T93
Shanghai Pulp and Paper Co., Ld.	—	T450,000	4,500	T100	T100	T10,000	..... T3,288	31-12-03	Interim of T6 for '04	20-7-04	7½	T160 buyers
Shanghai Waterworks Co., Ld.	1881	£144,000	7,200	£20	£20	T140,000	.....T7,369	31-12-03	Interim of 15s. for '04	25-7-04	7¾	T390 buyers
Singapore Dispensary, Ld	1891	$30,000	600	$50	$50	$19,000	..... $800	31-7-03	$5 for year ended 31-7-02	11-11-03	5¾	$90
South China Morning Post, Ld.	1903	$150,000	6,000	$25	$25	none	*Dr.* $39,020	29-2-04	None	—	—	$25 nominal
Steam Laundry Co., Ld.	1902	$75,000	5,000 / 10,000	$5 / $5	$5 / $3	none	.....$3,644	31-5-04	60 cents for year ended 31-5-04 / First year	2-8-04 / —	8½ / —	$7 / $4 sellers
Straits Ice Company, Ld.	1884	$200,000	2,000	$100	$100	$45,000	—	—	$7½ for second half year '03	...-2-04	9	$165 sales
Straits Trading Co., Ld.	1887	$2,500,000	250,000	$10	$10	$650,000	.....$83,405	30-9-03	$1 dividend and 25 cents bonus for half year ended 30-9-03..	2-12-03	7	$38½ sellers
Tebran Planting Co., Lt.	1897	$100,000	20,000	$5	$5	none	*Dr.* $24,551	30-4 04	None	—	—	$1¼ buyers
Tientsin Native City Waterworks Co., Ld.	1902	T294,100	2,941	T100	T100	none	..... T413	31-12-03	T2 for half year	9-3-04	—	T. T110
Tientsin Waterworks Co., Ld.	1901	T. T200,000	2,000	T. T100	T. T100	T15,259	..... T2,211	30-4-04	Final of T4 making T8 for '03/4	20-6-04	6¼	T. T130
United Asbestos Oriental Agency, Ld.	1896	$100,000	9,900	$10	$4	$20,000	..... $480	31-5-04	90 cents / $29.70 for year ended 31-5-04	6-8-04	9¼ / 16¾	$9½ buyers / $180 buyers
Do. do. (Founders')			100	$10	$10				$1 for 1903	28-3-04	10¼	$9½ buyers
Watkins, Limited	1899	$100,000	10,000	$10	$10	e $4,802	.....$1,042	31-12-03	Final of 70 cts. making $1.20 for 03/4	28-9-04	11	$11 sellers
William Powell, Ld.	1901	$120,000	12,000	$10	$10	e $3,000	..... $588	30-6-04				

LOANS AND DEBENTURES	AGENTS FOR THE LOAN	AMOUNT OF LOAN	PAR VALUE	OUTSTAND'G BONDS	WHEN PAYABLE.	CLOSING QUOTATIONS
Chinese Government, 7 per cent. Silver Loan 1886 E.	H. & S. Bk. Cor.	T767,200	T250	2022	Mar. 31st & Sept. 30th each year until Mar. 31st, 1917.	par.
Hongkong Hotel Co., Ld., 6% Mortgage Debentures of 1899‡	H. & S. Bk. Cor.	$500,000	$500	§ all	Half yearly, June 30th and December 31st	par. Plus accrued interest
Chinese Engineering & Mining Co., Ltd., 6 per cent Debentures of 1902†	The Company..	£500,000	¶	£490,000	Half yearly, January 1st and July 1st	par.

a Amortisation Fund.
b Building Reserve Account.
c Capital Reserve Fund.
d Depreciation and Insurance Fund.
e Equalization of Dividend Fund.
f Exchange and Investment Fluctuation Account.
g Gold Reserve Fund.
h Exchange Reserve Account.
i Insurance Fund.
j Reinsurance Fund.
k Contingencies Account
l Legal Reserve Fund.
m Electric Light Installation Fund.
n Sinking Fund.
o
p Authorized capital $2,000,000.
q Depreciation and Repair Fund.
r Repairs and Renewals Account.
s Silver Reserve Fund.
t
u Underwriting Suspense Account.
v Special Works Fund.
w
x Extra Reserve Fund.
y
z 75,000 owned by the Company.
1 5,725 shares unissued.
2 First issue of 60,000 of which 10,411 unallotted.
3 785 shares unissued.
4 7,600 shares unissued.
5 1,616 shares unallotted.
6 842 shares unallotted.
7 Only 13,000 shares issued.
8 14,000 shares unissued.
9 1,166 shares unissued.
* Based on last year's dividend.
§ 373 held by the Company.
¶ In certificates of £20 and £100
‡ Redeemable in 10 years, or at option of Company the Company giving 6 months' notice.
† Redeemable at par at rate of £10,000 per annum from 31st December, 1903, to December, 1952.
Dr. Deficit.

SINGAPORE SHARE QUOTATIONS.

NAME	DATE OF FORMATION	CAPITAL	CAPITAL PAID UP	NO. OF SHARES	ISSUE VALUE	PAID UP	RESERVE	LAST DIVIDEND	SINCE LAST MAIL HIGHEST	SINCE LAST MAIL LOWEST	CLOSING QUOTATIONS
Mining.									$	$	$
Bersawah Gold Mining Co., Ld.	1900	$175,000	115,000	13,500 *1*	10	7.50	.....	.....	.....	.....	13 sales
" " " " *Deferred..*				4,000	10	10	.....	.....	.....	.....	8 buyers
Bruseh Hydraulic Tin Mining Co., Ld.	1901	600,000	600,000	60,000	10	10	.....	.....	.....	.....	3.50 sellers
Kadana Gold Mining Co., Ld.	1901	300,000	220,000	20,000	10	10	.....	.....	.....	.....	10 nominal
" " " " *Pref..*				10,000	10	6	.....	.....	.....	.....	6 "
Kechau Goldfields, Ld. *Fully paid*	1902	£30,000	£16,175	6,207	1	1	.....	.....	.....	.....	9.00 sellers
" " " *Contrib.*				10,493 *2*	1	19/-	.....	.....	.....	.....	8.50 sellers
Pahang Corporation Ld.	1889	£250,000	244,306	244,306	1	1	20,000	3 per cent for year ending 30 6-02.....	.....	.....	4.00 sellers
Pahang Kabang Ld.	1890	375,000	366,000	360,000	1	19/6	.....	.....	0.90	0.70	0.90 sales
" " " *Pref.*				15,000	1	1	.....	.....	.....	.....	..... nom.
Queensland Raub G. M. Co., Ld. *Fully paid*	1901	£146,700	100,866	36,700	1	1	.....	.....	.....	.....	..... nom.
" " " " *Contrib.* ..				110,000	1	11/8	.....	.....	.....	.....	0.30 sellers
Raub Aust. Gold Ming. Co., Ld. *Fully paid*	1892	200,000	191,250	50,000	1	1	4,873	1s. paid January, '01	.....	.....	4.75 nom.
" " " " *Contrib....*				150,000	1	18/10	.....	1s. " " "	.....	.....	4.50 sales
Redjang Lebong Mining Co.	1898	f.2,000,000	1,800,000	20,000 *3*	100	100	.....	20 per cent for year ending 31-12-03..	210	200	210 buyers
Royal Johore Tin Mining Co., Ld.	1900	$220,000	220,000	22,000	10	10	.....	5 " for year ending 15-2-04....	.....	.....	3.50 sellers
Sipiau Tin Co., Ld.	1899	230,000	230,000	23,000	10	10	8,000	5 " for ½ year ending 30 6-03	.....	.....	3.75 sellers
South Raub Gold Ming. Synd. Ld.	1898	100,000	100,000	1,000	100	100	.....	.....	.....	.....	10 nom.
The Belat Tin Mining Co., Ld.	1903	300,000	300,000	30,000	10	10	.....	.....	.....	.....	8.00 sellers
Tronoh Mines, Ld.	1902	£160,000	149,185	160,000 *5*	1	1	.....	1s. paid May, '03.....	21.25	20.50	21.25 sales
Duff Development Co., Ld.	1903	£400,000	£350,000	400,000 *6*	1	1	.....	.....	.....	.....	10 .....
General.											
Fraser & Neave, Ld.	1898	225,000	225,000	4,500	50	50	112,500	10 per cent and 5 per cent bonus for '03			100 sellers
H'kong and Shanghai Banking Corporation	1865	10,000,000	10,000,000	80,000	125	125	10,000,000 *9*	30s. div. and 10s. bonus at 1s. 8⅞=	.....	.....	650 ....
							6,500,000	$22.99.4 per share for ½ year ending 31-12 03			
							250,000 *10*				
Howarth Erskine, Ld.	1901	1,200,000	1,200,000	12,000	100	100	140,000	10 & 5 p. ct. bon. for yr. end 30-6-04...	.....	.....	202½ .....
Maynard & Co., Ld.	1901	34,000	34,000	3,400	10	10	.....	20 per cent for year ending 31-10-03..	.....	.....	27 sellers
Riley, Hargreaves & Co., Ld.	1899	875,000	875,000	6,000	100	100	150,000	10 p. ct. and 2½ p. ct. bon. for year '03			187½ buyers
" " " 7% Pref.				2,750	100	100	.....	7 p. ct. for year 1903.....	.....	.....	112 buyers
Singapore Cold Storage Co., Ld. *Fully paid*	1903	600,000	130,000	1,000	10	10	.....	.....	.....	.....	10 nominal
" " " *Contrib....*				24,000 *4*	10	5	.....	.....	.....	.....	5.10 .....
Singapore Dispensary Ld.	1891	30,000	30,000	600	50	50	19,000	12½ per cent for year ending 31-7-04			75 sellers
Straits Ice Co., Ld.	1884	200,000	200,000	2,000	100	100	45,000	7½ " for ½ year ending 31-12-03	.....	.....	155 sellers
Straits Steam Ship Co., Ld.	1890	500,000	421,500	5,000 *7*	100	100	400,000	5 per cent for ½ year ending 31-12-03	.....	.....	145 sellers
							169,228 *11*				
Straits Trading Co., Ld.	1887	3,000,000	2,500,000	300,000 *8*	10	10	700,000	10 p.ct. & 25cts. bon. ½ yr. end 31-3-04	38.75	38.50	38.75 sales
							1,021,395 *12*				
Tanjong Pagar Dock Co., Ld.	1864	3,700,000	3,700,000	37,000	100	100	1,950,000	$6 for half year ending 30-6-04.....	.....		240 sales
Debentures.		$									
Howarth Erskine Ld. 7 per cent ...		250,000	.....	.....	.....	.....	.....	.....	.....	.....	3 per cent prem.
Singapore Municipal 6 " ...		400,000	.....	.....	.....	.....	.....	.....	.....	.....	... " nominal
" " 5 " ...		1,878,000	.....	.....	.....	.....	.....	.....	.....	.....	1 " prem. buyers
" " 4 " ...		655,500	.....	.....	.....	.....	.....	.....	.....	.....	2 " dis. nominal
Riley, Hargreaves & Co., Ld. 6 p. cent		225,000	.....	.....	.....	.....	.....	.....	.....	.....	2 " prem. buyers
Tanjong Pagar Dock Co., Ld. 5 "		250,000	.....	.....	.....	.....	.....	.....	.....	.....	2 " prem. buyers
" " " " 5 "		1,365,500	.....	.....	.....	.....	.....	.....	.....	.....	1 " prem. buyers

1 3,500 unissued.
2 13,300 "
3 2,000 "
4 35,000 unissued.
5 10,815 "
6 50,000 "
7 785 unissued.
8 50,000 "
9 Special Gold Reserve Fund.
10 Insurance Fund.
11 Sundry Reserves.
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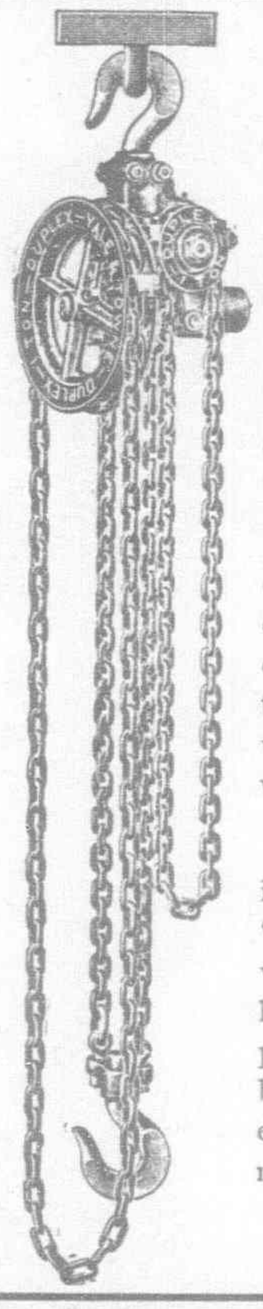

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Sealed proposals in triplicate will be received until noon, December 31, 1904, and thereafter publicly opened for the delivery at Cebu, Cebu, P. I., of thirty thousand barrels of PORTLAND CEMENT at the ship's side, or so much thereof as may be required.

Envelope containing proposals should be plainly marked "PROPOSALS FOR PORTLAND CEMENT, P. I."

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Bidders are requested to be present at 12 m., December 31, 1904, when bids will be opened

Address all communications to the Consulting Engineer to the Commission, Manila, P. I.,

J. W. BEARDSLEY,
Consulting Engineer
to the Commission.

Shanghai Municipal Loan of 1904.—Under the authority of Resolutions V. and VI. passed at the Annual Meeting of Ratepayers on the 15th instant, the Council hereby invites applications of debentures to the extent of six hundred and seventy thousand taels (Tls. 670,000). The conditions upon which the debenture certificates will be issued are.:—

1.—The loan will bear interest at the rate of six per centum per annum, payable on the 31st of December and the 30th of June in each year.
2.—Debentures will be redeemable in not less than five years and not more than twenty years from the 30th of June, 1904, in such amounts, and in such manner, as the Council may from time to time determine.
3.—Applications for the whole of the debentures or for any number thereof will be received by the undersigned from this date.
4.—The scrip will be issued in amounts of Tls. 100, Tls. 500, and Tls. 1,000 each. Applicants will please state the amounts in which the debentures they apply for are to be issued.
5.—The rate of issue is fixed at par until further notice, and no application below this rate will be entertained.

By Order, J. O. P. BLAND,
Secretary.

Council Room,
Shanghai, 25th Mar, 1904.

NOTICE.—TO CONTRACTORS—Office of the Bureau of Architecture and Construction of Public Buildings, 158 Calle Anloague, Manila, P. I., December 9, 1904. Sealed proposals addressed to the undersigned and plainly marked "Proposal for Job No. 550," will be received at this office until 10:00 a. m., December 20th, 1904, for furnishing all material and doing all labor required to fully complete the construction of a new Roof on the Intendencia Building, Manila, P. I., in the manner and conditions set forth in the form of proposal and the specifications, copies of which with other information may be obtained upon application to this office. The right is reserved to reject any or all bids and waive any defects.

EDGAR K. BOURNE, Chief of Bureau.

"OFFICE OF THE INSULAR PURCHASING AGENT. —Manila, P. I., Dec. 3, 1904.—Sealed Proposals, in triplicate, subject to the usual conditions, will be received at this office until 11 a. m., December 13, 1904, at which time and place they will be opened in the presence of attending bidders, for furnishing and delivery of all Castings, brass and iron, required by and through this Bureau for the period from January 1, 1905, to June 30, 1905.

Blanks and specifications can be had at this office.

E. G. SHIELDS, Insular Purchasing Agent."

NOTICE.—TO CONTRACTORS—Office of the Bureau of Architecture and Construction of Public Buildings, 158 Calle Anloague, Manila, P. I., Nov. 10, 1904. Sealed proposals addressed to the undersigned and plainly marked "Proposal for Job No. 547," will be received at this office and at the office of the Provincial Supervisor, Cebu, P. I., until 10:00 A.M., December 20th, 1904, for furnishing all material and doing all labor required to fully complete the erection of a coal shed at Cebu, P. I., in the manner and conditions set forth in the form of proposal and the specifications, copies of which with other information may be obtained upon application to this office. The right is reserved to reject any or all bids and waive any defects. D. E. GRAHAM, Acting Chief of Bureau. 211

OFFICE OF CONSTRUCTING QUARTERMASTER, NEW POST OF MANILA.—Manila, P. I., November 30, 1904.

Sealed proposals in triplicate for furnishing all labor and portion of material, for constructing 58 frame buildings at this post will be received here until 10 a. m., December 31st, 1904, and then opened. Information furnished on application. Envelopes containing proposals should be endorsed "Proposals for Construction" and addressed: M. C. Martin, Deputy Quartermaster General, U. S. A.

OFFICE OF THE INSULAR PURCHASING AGENT Manila, P. I., December 2, 1904.—NOTICE:—Sealed proposals, in triplicate, subject to the usual conditions, will be received in this Office until 11 a. m. December 12, 1904, at which time and place they will be opened in the presence of attending bidders, for furnishing, delivery and piling in the I. P. A. Lumber Yard 50,000 hard burnt Brick, standard size.

Apply at this Office for forms and specifications.

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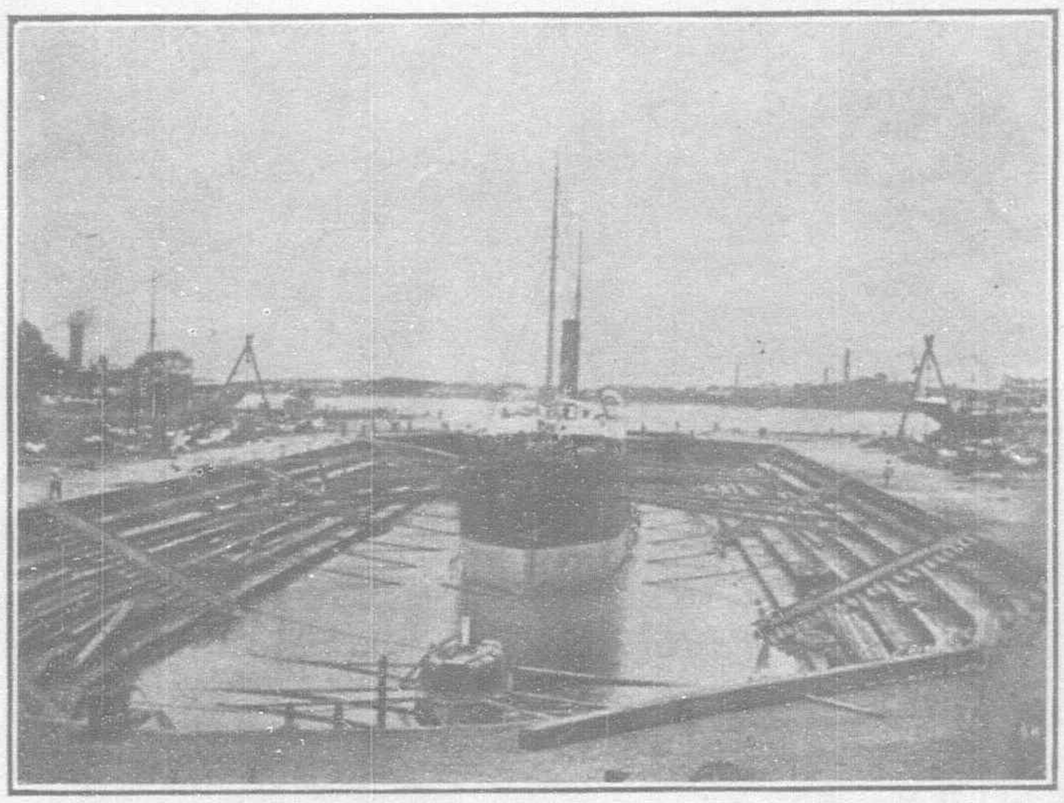

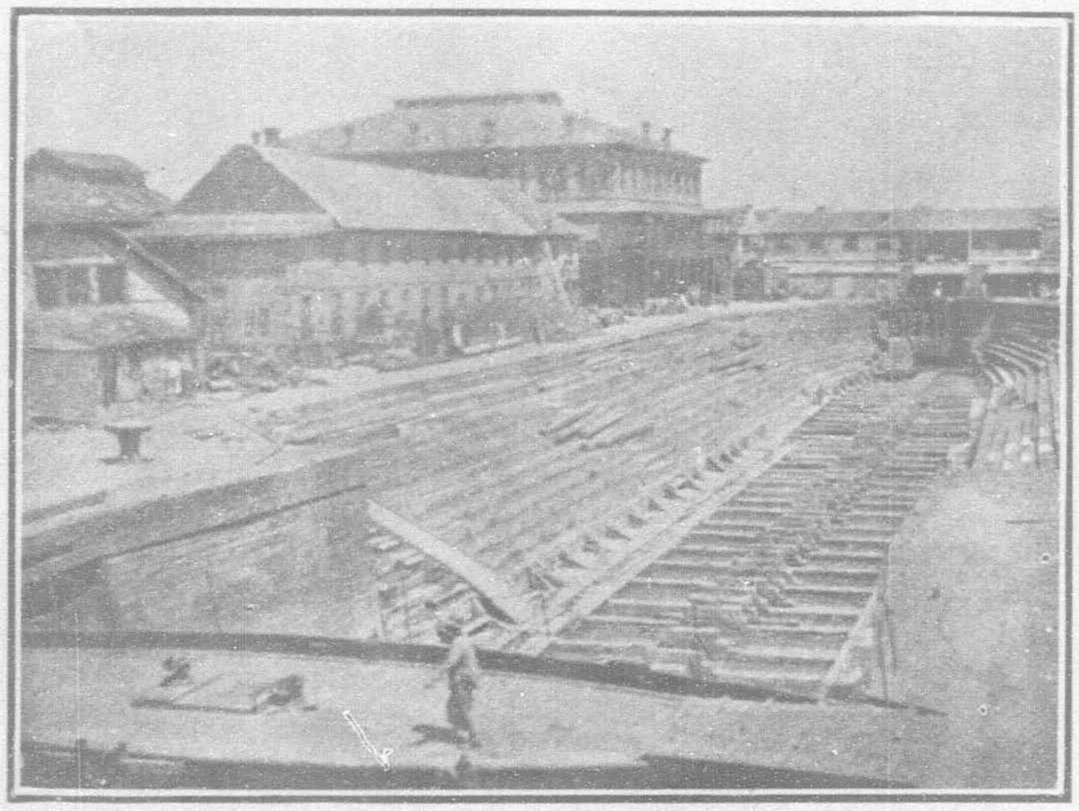

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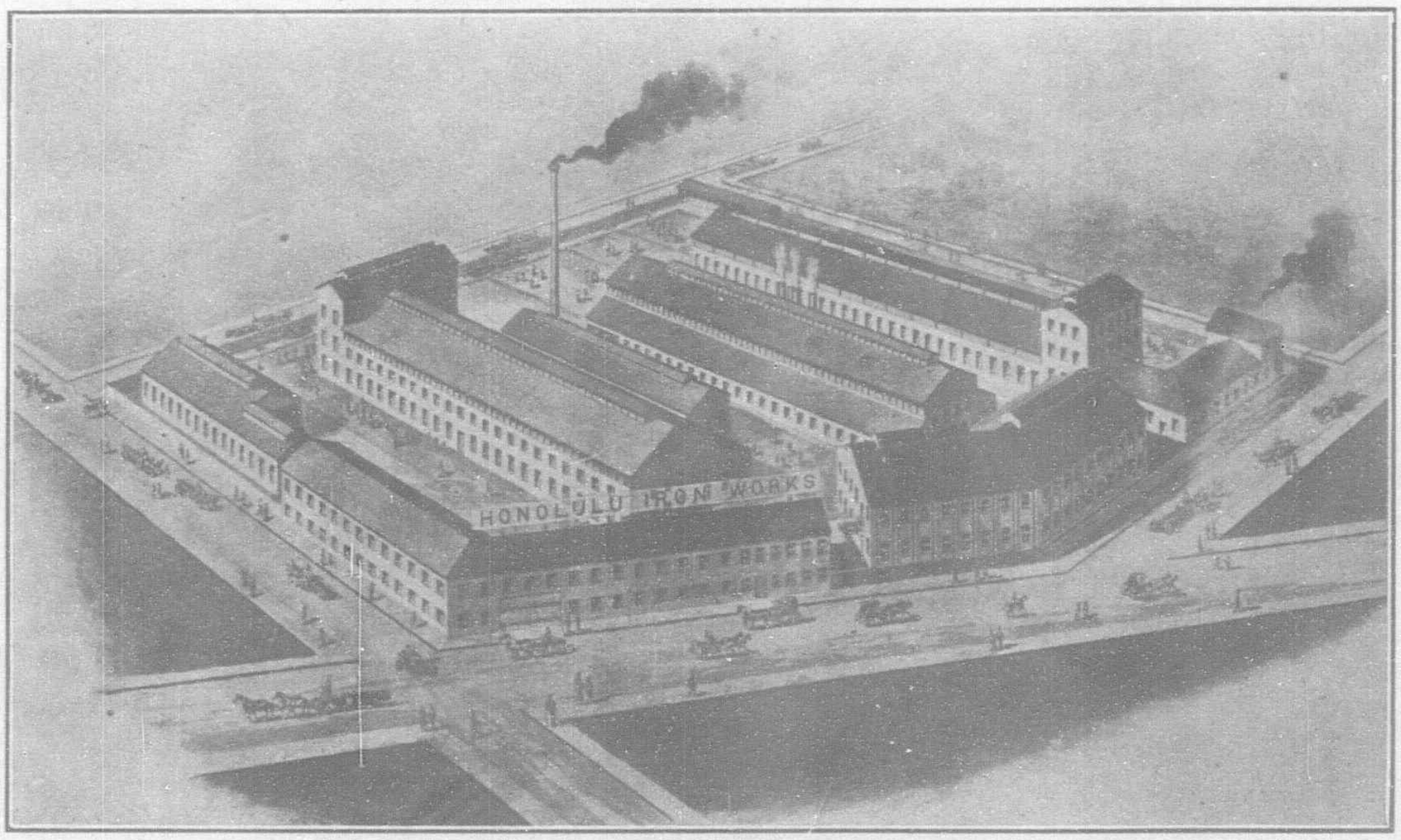

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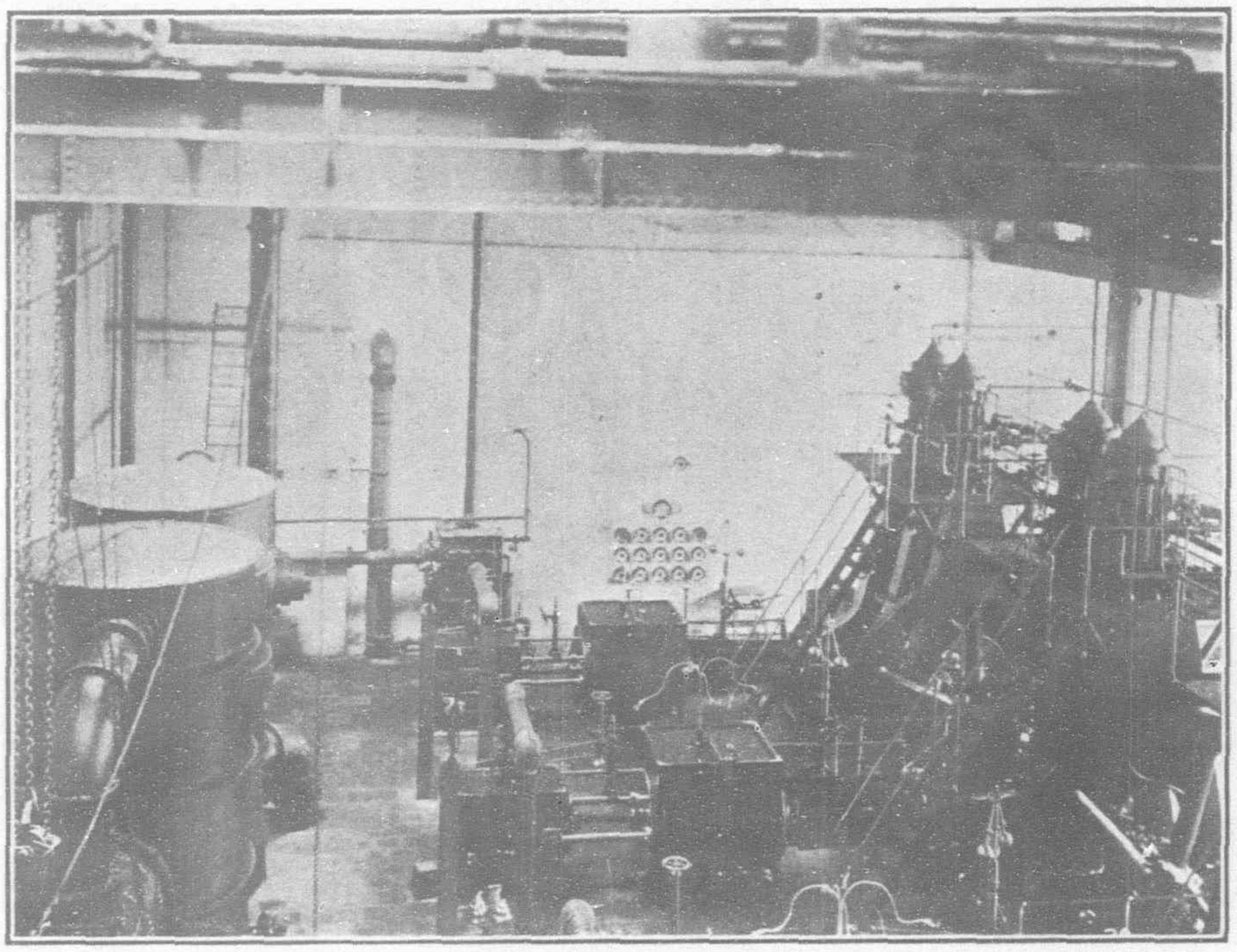

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